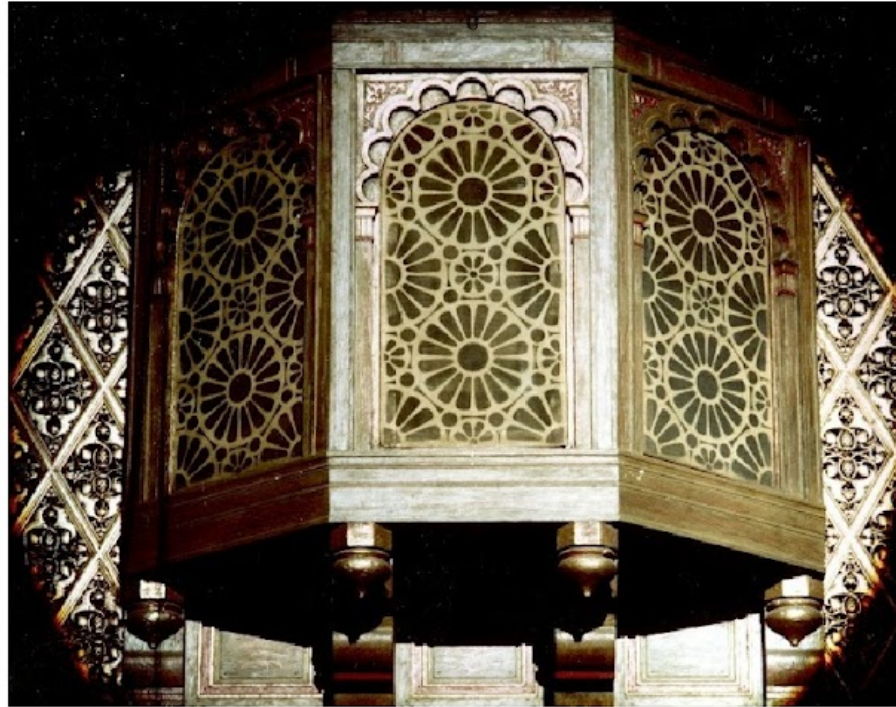


1929 AUDIO AND ELECTRO-MECHANICALS



The Atlanta Fox Theatre was financed and constructed by the Shriners (Atlanta's Yaraab chapter) but built to the specifications of William Fox, who agreed to lease the Auditorium section for 21 years. The building contained 285 rooms and resembled a moderately-sized castle, unique in Movie Palace architecture because it was ornamented on all four sides. The Fox opened on December 25, 1929.



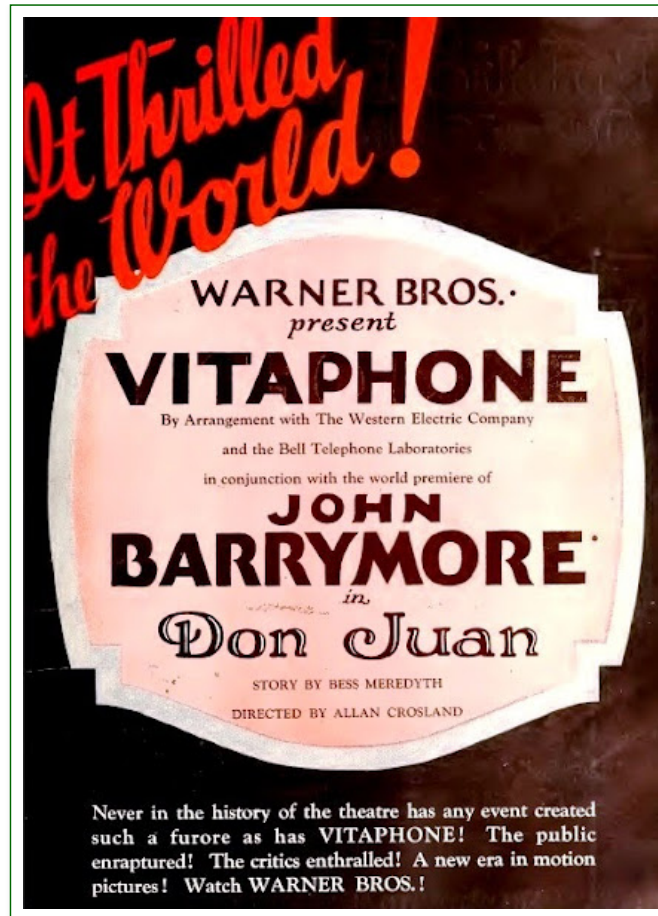
At the time of its construction, the 4462-seat Atlanta Fox was the sixth largest theatre in the world and counted among its original equipment a permanent public address or sound reinforcement system forty years before Broadway credited the first audio designer. The system included a central loudspeaker cluster, a front-of-house mix position, and patch panel.



All audio equipment in the Fox Theatre was manufactured by Western Electric, a Chicago concern founded by Elisha Gray and Enos Barton which in 1882 became the exclusive manufacturer of equipment for the Bell Telephone Company, later known as AT&T. By 1929, Western had become a wholly-owned subsidiary of Bell, and they also sold retail under the trade name Graybar, after Gray and Barton.



Western Electric was the prime mover responsible for the development of practical talking picture apparatus, and in August, 1926 its collaboration with Warner Brothers resulted in the first commercially successful "talkie." Bell Laboratories, also credited below, was created in 1925 as a joint venture between Western and Bell Telephone.

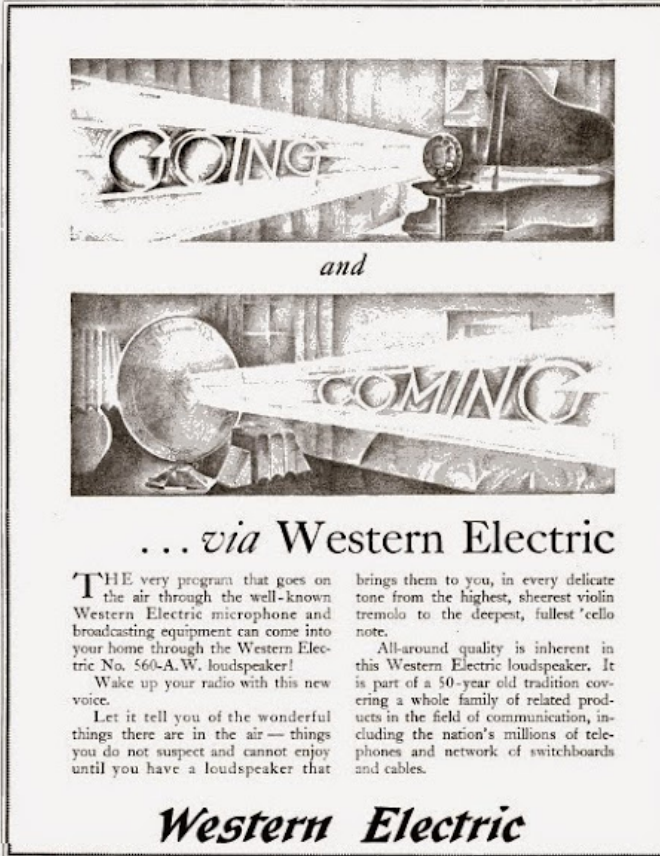


Following the success of "Don Juan" and a proliferation of talkies, in January, 1927 Western created a subsidiary ERPI to manufacture, install, and service talking picture equipment in studios and theatres. ERPI stood for Electrical Research Products, Incorporated, but to the public "The Voice of Action" meant Western Electric. As with one's residential telephone, the talking picture apparatus remained the property of ERPI and was leased to the theatre "subscriber" on a monthly basis.



Courtesy gokudo.co.jp

In addition to talking pictures, Western Electric had introduced the first public address system in 1920 as a natural outgrowth of their work in radio. New York City's first radio station was put on the air by Western in 1922, and WEAf eventually became WNBC, the flagship station of the National Broadcasting Company.



and

... via Western Electric

THE very program that goes on the air through the well-known Western Electric microphone and broadcasting equipment can come into your home through the Western Electric No. 560-A.W. loudspeaker!

Wake up your radio with this new voice.

Let it tell you of the wonderful things there are in the air — things you do not suspect and cannot enjoy until you have a loudspeaker that

brings them to you, in every delicate tone from the highest, sheerest violin tremolo to the deepest, fullest 'cello note.

All-around quality is inherent in this Western Electric loudspeaker. It is part of a 50-year old tradition covering a whole family of related products in the field of communication, including the nation's millions of telephones and network of switchboards and cables.

Western Electric

The first theatre to be equipped with public address was the New York Capitol in 1923, where Roxy's weekly programs were broadcast over Western Electric's station WEAf. Seeing Roxy's use of a megaphone during rehearsal, Western invented the "God mic" so that Roxy's voice could be directed to the stage switchboard and elsewhere.

Direct Rehearsals With Amplifier

Rothafel Uses Latest Device at Big Theatre

The megaphone, for so long the trusty aid of theatrical directors, has completed the useful span of its existence according to S. L. Rothafel, motion picture exhibitor and director of the Capitol Theatre. At least, such is the fate of the megaphone without which no Saturday night rehearsal

at the world's largest theatre was complete, and which now rests in the director's archives with other souvenirs of his professional career.

Mr. Rothafel now directs the rehearsals of programs at the Capitol by means of a voice amplifying apparatus, known as the



Figure 2
Microphone Control Panel



Figure 1
Microphone

Public Address System of the Western Electric Company. Speaking into the microphone in an ordinary conversational tone, the director is able to give his instructions equally clear to the projection booth two hundred feet away, to the man in the spotlight room above the booth, to the electric switchboard behind the stage and to the musical director and is able to reach every part of theatre necessary. This is the first time that the loud speaking apparatus has been put to this novel use. It is interesting to note that the director of the Capitol uses no notes or memoranda of any kind, in directing rehearsals of his presentations.

The two devices pictured below are the important features of the amplifier. The microphone (Fig. 1) is the instrument into which Rothafel talks and his directions are carried to the stage and amplified.

Roxy playing "God" at the New York Capitol, 1923.



The Roxy and the Washington, DC Fox which both opened in 1927 were the first theatres to be designed with public address systems in mind.

Use Microphone to Make Announcements on Sound Equipment

A number of theatres equipped for synchronized pictures have installed microphones so they can use the equipment for making announcements from the stage. In some cases a separate set of horns is installed over the proscenium arch or somewhere at the side of the stage so as not to interfere with presentation acts. Both the Roxy theatre in New York City and the Fox theatre in Washington have installed such systems.

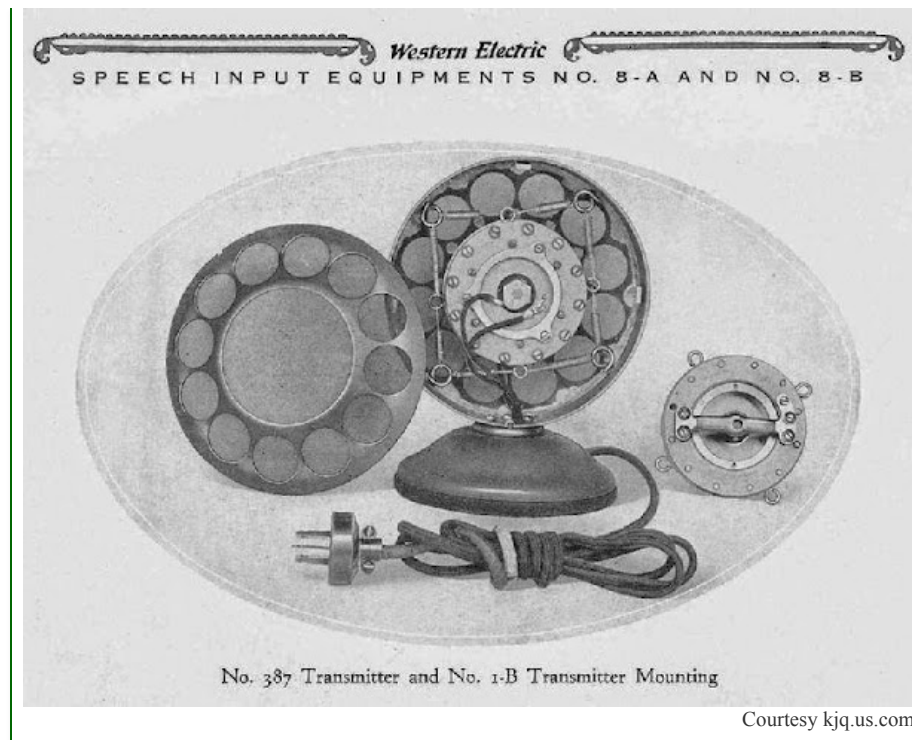
The installation is simple, according to Donald F. Whiting, a Fox-Case engineer who was a pioneer in the development of the vacuum tube amplifier and loud speaker equipment. If the theatre is equipped for Movietone, all that is needed is a microphone and a key to switch the announcing through the regular multi-stage amplifier and loud speakers used for Movietone. The microphone may be installed in the projection booth, on the stage or anywhere the theatre manager finds most convenient.

In effect, the addition of a microphone gives a sound-equipped theatre the same results as the Western Electric public address equipment. A carbon microphone or condenser microphone and associated amplifier works into a multi-stage amplifier and from there the voice of the announcer is carried through the loud speakers into the auditorium of the theatre.

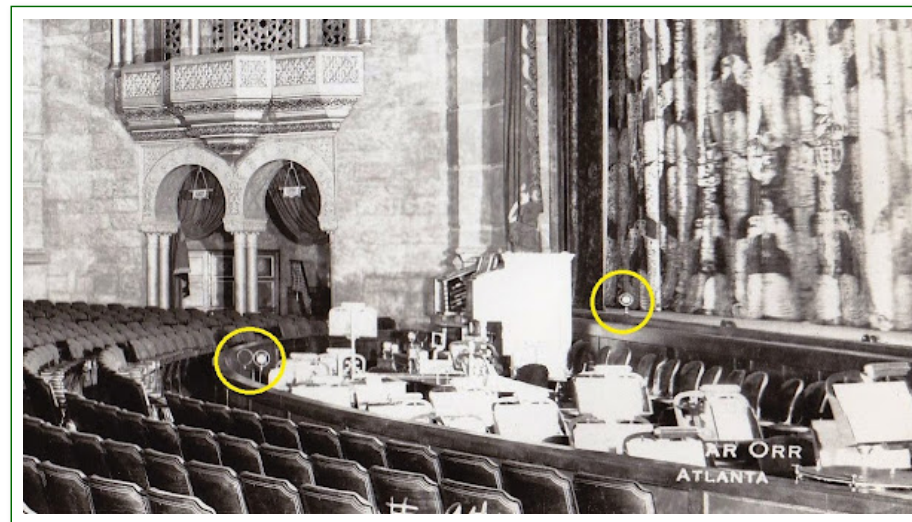
Since most theatres want to get the regular loud speakers off the stage to make way for acts, the special horns are added. The same multi-stage amplifier may be used, however, in this additional application of the equipment.

Announcements through the loud speakers have proved most effective wherever this system has been tried, Whiting said. At the Fox theatre in Washington stage celebrities are introduced by the simple expedient of announcing their names through the loud speaker when they first appear.

By 1929, Western Electric had standardized their equipment, beginning with the microphones which they called "transmitters." The carbon-button Microphone utilized at the Fox Theatre was the only model Western offered for a decade.



The Atlanta Fox Theatre had a stock of sixteen microphones: five within the footlight trough; seven on the orchestra pit elevator; and four spare.

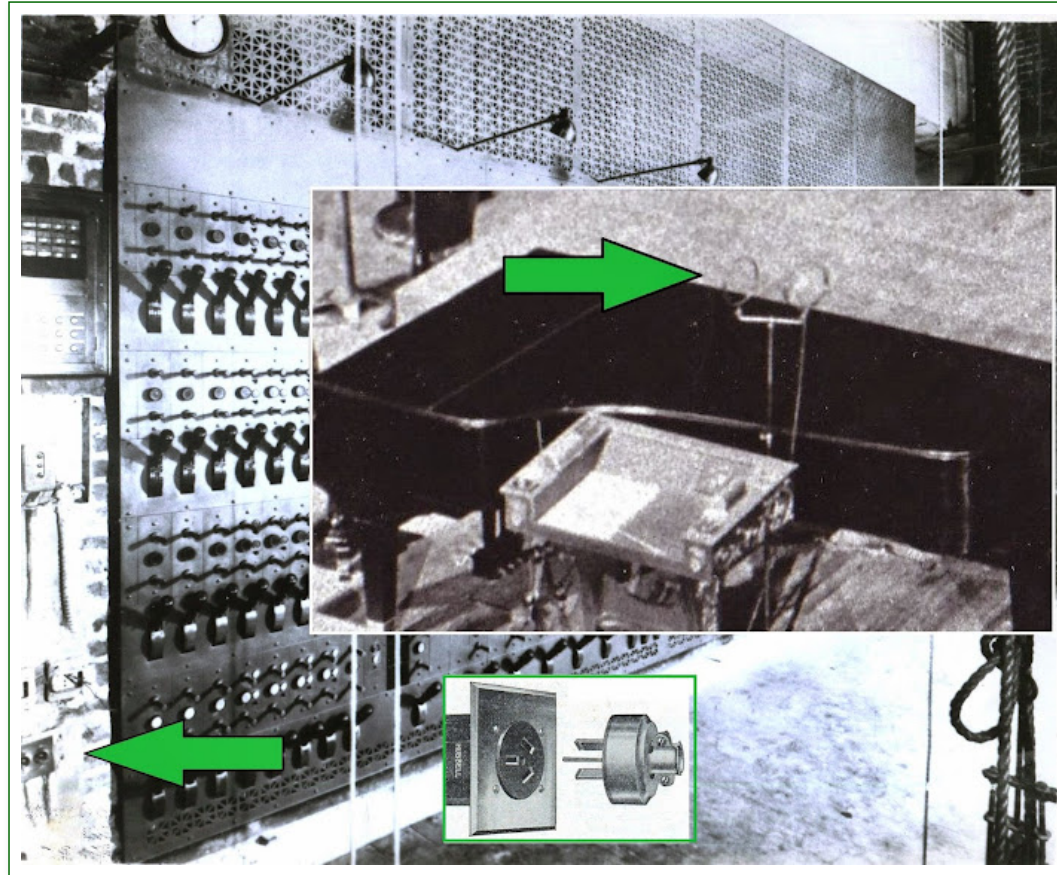


The Western 1-B microphone was also utilized at Atlanta's NBC affiliate, WSB which in 1929 aired via a 1000-watt Western Electric broadcast radio transmitter.



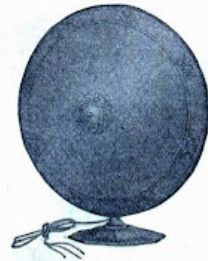
Courtesy liveauctioneers.com

The upper arrow points to a pair of microphones on the Fox orchestra pit elevator, and the lower arrow, microphone receptacles located beneath the Fox Theatre Stage Director's desk. The inset shows the three-prong polarized microphone connector. Mic cables within the building were lead-jacketed.



The smallest Western Electric loudspeaker (contraction of "loud speaking telephone") was their only model with a paper cone. At the Fox, a 560-AW was located in the Green Room on the second floor of the dressing room tower as perhaps the very first program monitor.

**No. 560AW Western Electric Loud
Speaking Telephones**



The No. 560AW loud speaking telephone is a portable sound projecting device mounted on a metal stand suitable for placing on the table of a living room.

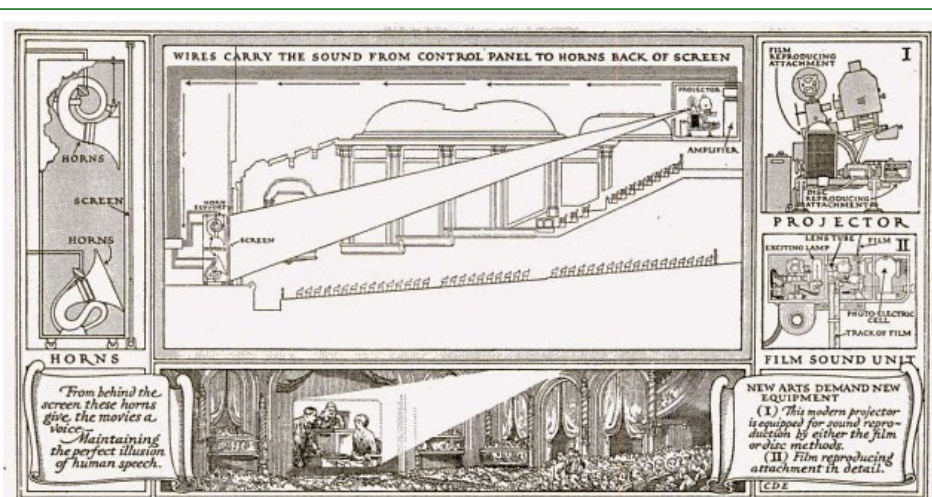
The projector consists of 2 cones of specially selected material, having their bases cemented together. The apex of one cone is connected by a driving rod to an electro magnetic unit that responds to current impulses from the radio receiving set and thereby causes the cones to vibrate and reproduce the sound that is being sent out by radio telephony.

The design of the No. 560AW loud speaking telephone is such that the low notes of the 'cello, organ and piano and the brass instruments of the lower register are faithfully reproduced. This gives to the reproduction of instrumental music true depth and richness, thus making it satisfy the most exacting. But while particular stress has been laid on the reproduction of the low notes, because this is the more difficult, it should be borne in mind that the No. 560AW loud speaking telephone reproduces the high notes of the scale with great fidelity.



Left Graybar catalog; right, courtesy radioatticarchives.com

Years of research undertaken by Western Electric engineers determined the now-accepted principal of placing talking picture loudspeakers behind a perforated picture sheet and public address speakers above the proscenium so that the sound source appeared natural to the listener.



WHAT MAKES THE PICTURE TALK?

Your enjoyment of a Sound Picture depends largely on the quality of apparatus used. It pays to go to theatres equipped by the makers of your telephone—the Western Electric Company



The sensitive Sound Picture microphone (C), designed for studio recording. A development of the broadcasting microphone (B) and the telephone transmitter (A), indicating how "Sound Pictures" came out of the telephone.

WHEN you go to hear a Sound Picture you wish to be certain that the voices will be clear and natural; that the musical accompaniment and the sound effects coming from the screen will be thoroughly pleasing.

Near you is probably at least one theatre which assures just that, because it is equipped with the Western Electric Sound System. This apparatus, made by the makers of your telephone, is installed and inspected by engineers trained in this new art.

The reliable quality of this Sound System has been recognized by over 2,000 theatre exhibitors — exhibitors who have a habit of considering their patrons' satisfaction and who therefore believe that it is worth

To Theatre Exhibitors

People know good Sound reproduction when they hear it. They are quick to appreciate the high quality assured by Western Electric equipment. If your theatre is thus equipped you will render a service by displaying that fact in your advertising and in lobby and outside signs. For additional information address Electrical Research Products, Inc., 50 Church Street, New York.

a little extra investment to secure equipment of proved results.

In selecting Western Electric these exhibitors knew that the correct transmission and reproduction of sound is an extremely difficult problem, as is evidenced by the wide differences in quality between various radios and phonographs.

They knew that it was Western Electric's experience with this very problem which, after years of unsuccessful effort by others, finally made Sound Pictures possible.

This same organization which brought the telephone to its present excellence will likewise constantly seek to improve Sound Picture apparatus still further.



The loud-speaking horn (C), a marked improvement for Sound Picture purposes over the cone loudspeaker (B). It is a direct descendant of the familiar telephone receiver (A), and is made with the same care.



The horns for public address were like every other electrical device in a Super Deluxe Movie Palace: elegantly concealed. The five Super Deluxe Fox houses, and the Philadelphia Mastbaum (1929-1958) were equipped with public address systems specifically designed for

theatres. The Mastbaum (left) and the Atlanta Fox also had identical house draw curtains.



The PA horns at the Fox were an array of three model 15A horns, the same as used behind the picture sheet for talking pictures.



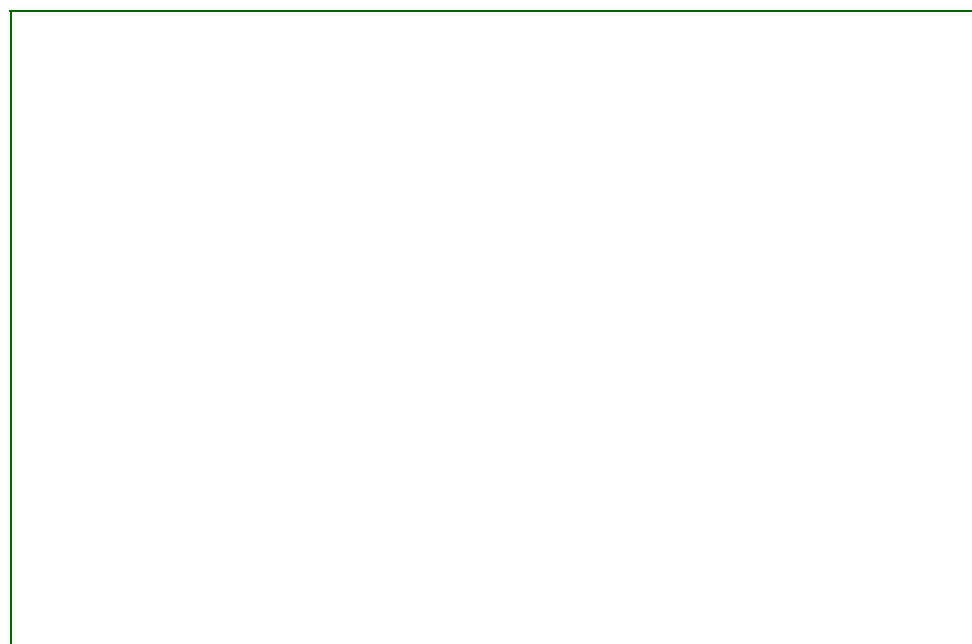
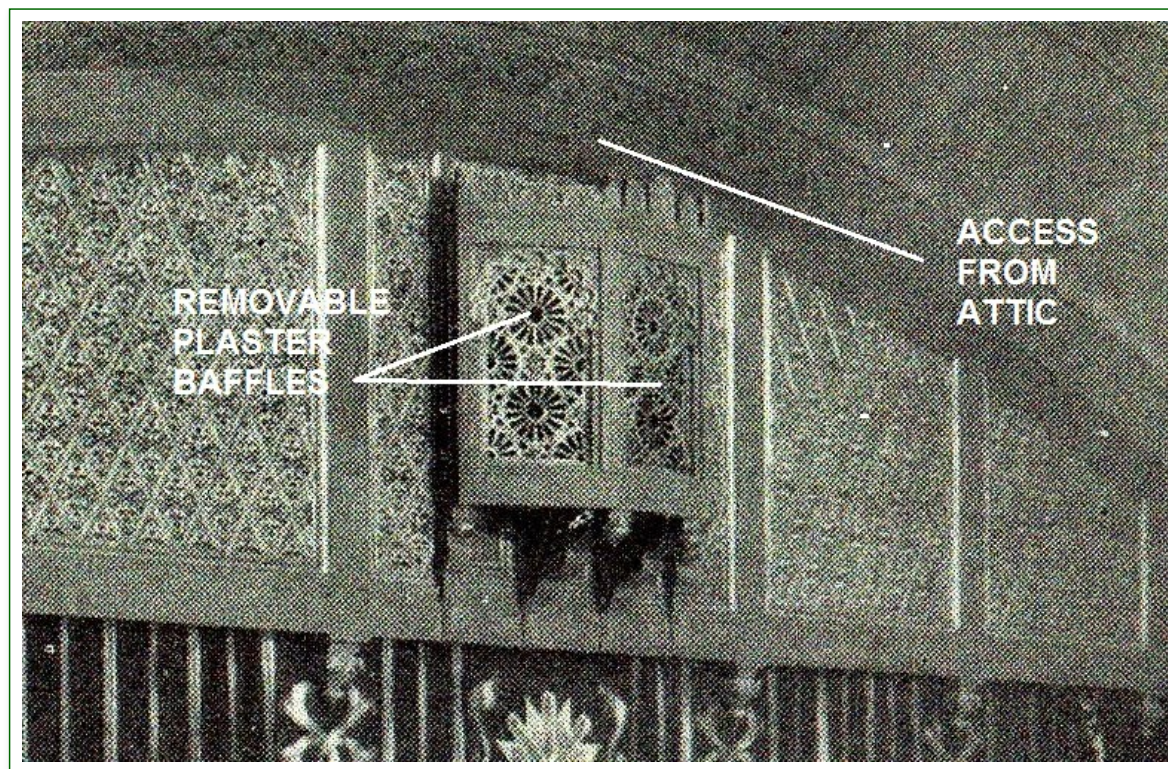
Courtesy ahchawachaghichon.blog.fc2.com

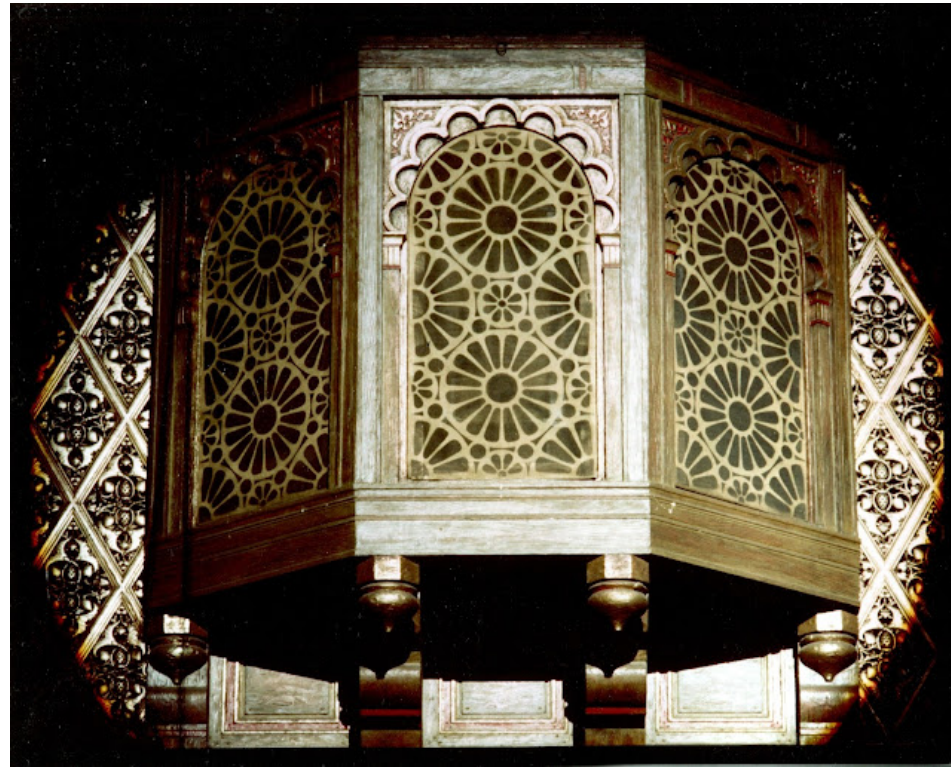
All Western horns regardless of model were driven by 555 "receivers," what today we call drivers. The cap protected the delicate diaphragm when the receiver was not in use. 555 receivers required four wires, two for signal and two for 12 volt DC field current for its electromagnet.



Courtesy soundup.ru

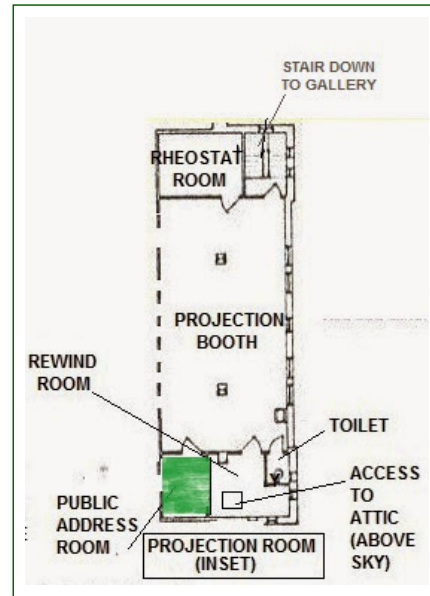
Access into the Fox central cluster was from the attic. The three acoustically transparent baffles were removable to allow installation and service.



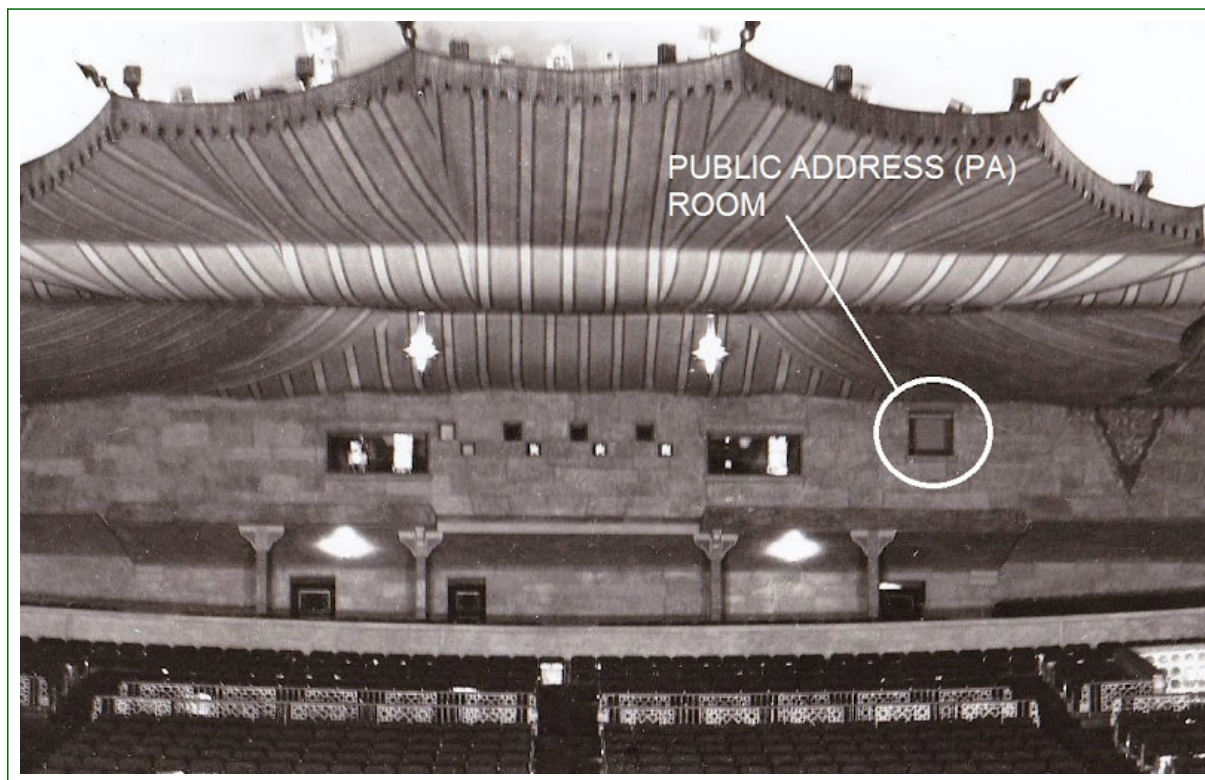


Courtesy Patti Patten, from the Joe Patten Collection

The audio console which was known as a "mixing panel" or as "speech input equipment" was located in the PA Room adjacent to the booth and was provided with a large window through which to view the stage.

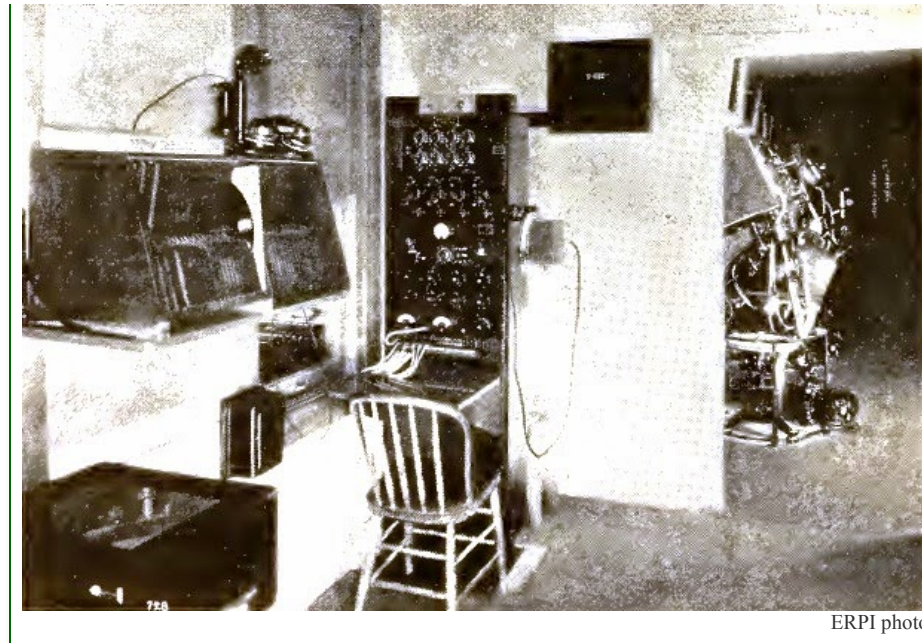


The audio man created the "mix" by listening to the signal from the PA booth monitor horn, and like in a radio or recording studio, the viewing window was sealed.



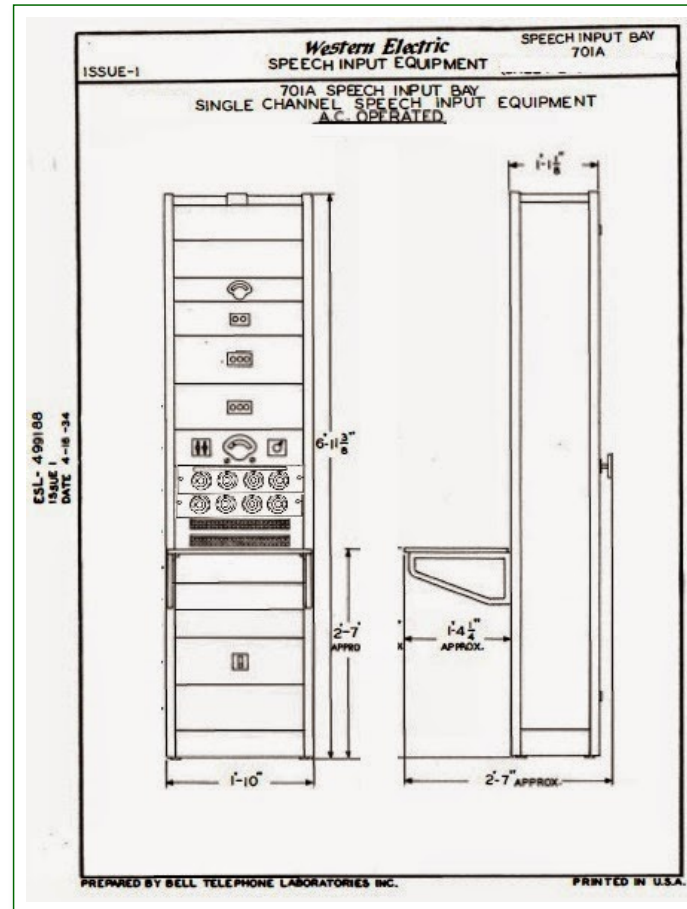
Directly above the operator's desk was a patch panel which connected any of 20 microphone inputs into any of eight mixer pots. Mic outlets were located backstage, within the footlight trough, and on the orchestra pit lift.



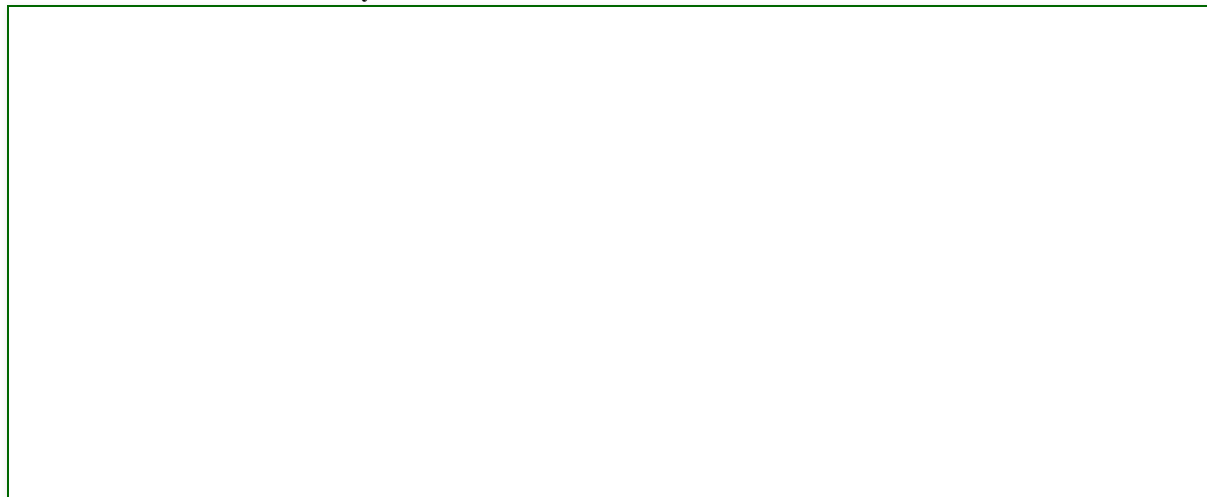


ERPI photo

The Speech Input Equipment rack was adapted from Western's broadcast equipment, rack-bound "console," extremely awkward for a human to operate.



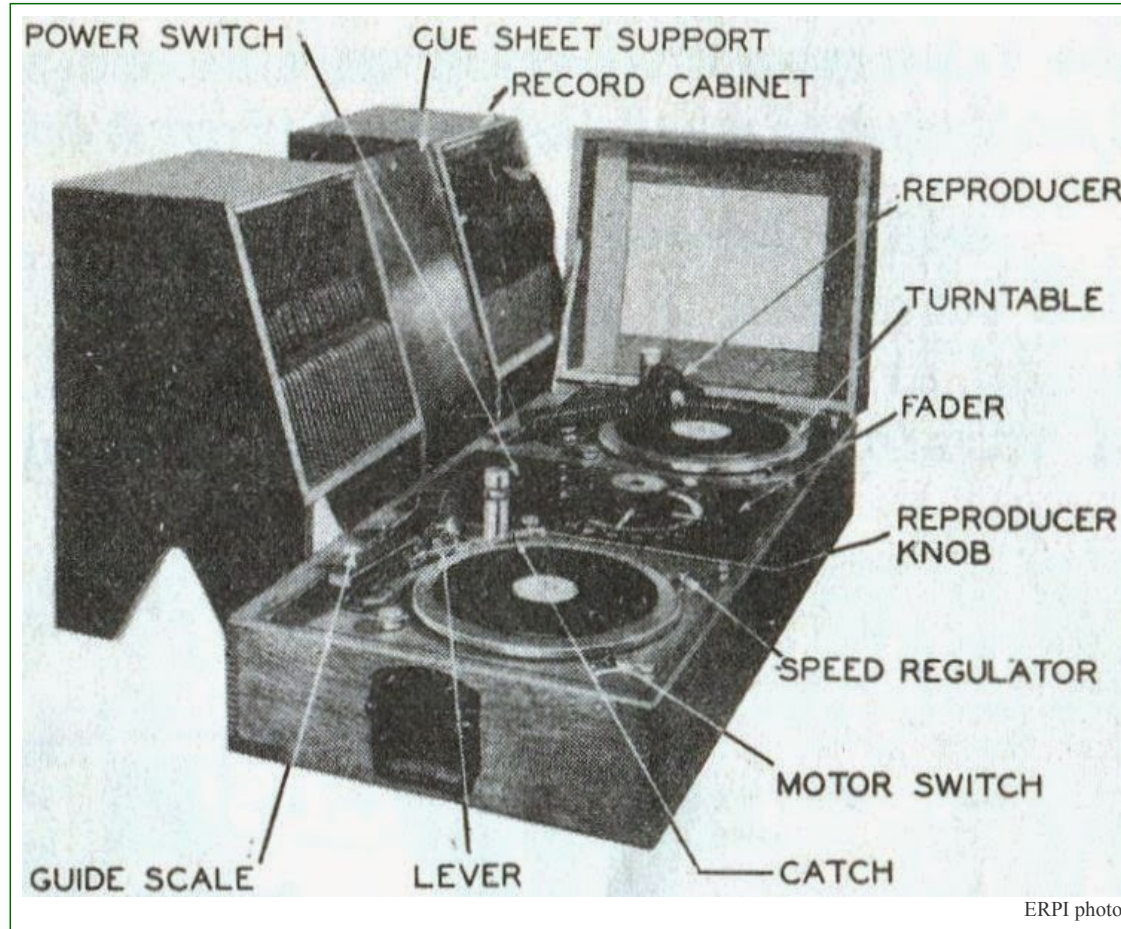
A typical bay of potentiometers or faders and off/on keys below.





The entire PA rack, which would today be termed a pre-amplifier, fed the amplifiers for the talking picture equipment, and via selector switches in the projection room, the projectionist could switch from film to PA mode. In the schematic, "Machines No. 1 and 2" refer to the film projectors, and "horns for synchronous reproduction" refer to those located behind the picture sheet for talking picture use.

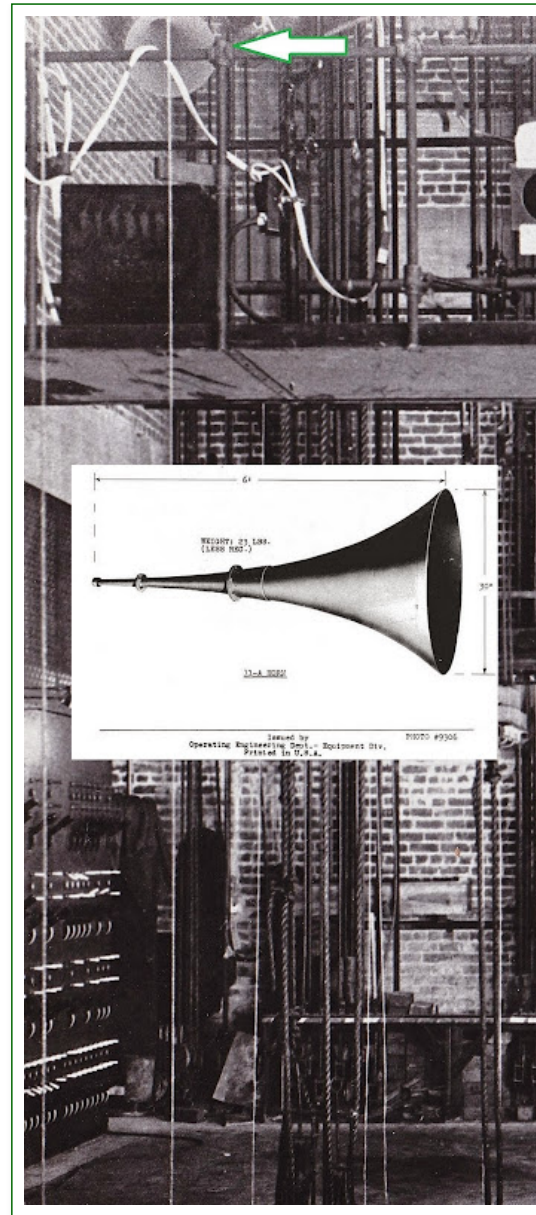
In all Western Electric talking picture installations, there was a non-sync room located off of the projection room. Non-sync rooms contained dual "reproducers" (turntables) for accompaniment of films for which there was neither a sound track nor a synchronized disc. The 16" turntables played 33 1/3 RPM discs with a fifteen-minute capacity. At the Fox, the reproducer was located in the PA Room.





Courtesy Gary Halverson

Non-sync and microphone channels could be played through the backstage horns only, for example a "god mic" would be set in the auditorium for the director to give instructions to the Switchboard operator. Model 11A horns were located in both downstage corners of the stagehouse.



A 1930 Western ad proclaimed their preeminence in the PA field, but the Depression put the kibosh on further theatre construction. In 1937, Western's ERPI subsidiary was spun off to become Altec-Lansing.



**"Louder...
louder!"**
--- a cry of the past ---



Straining forward to hear the speaker they were all ears and he was all lungs—but still they couldn't understand him. No wonder "louder please"—and remarks less courteous—were bywords at old time gatherings.

That was before Western Electric showed the world how to amplify and distribute the voice. Today the Western Electric Public Address System brings every word of the speaker to you, even in the last row of the balcony or on the far edge of the largest crowd outdoors.

And this, like most achievements in voice reproduction, was made possible only by this organization's long experience in making Bell telephones.

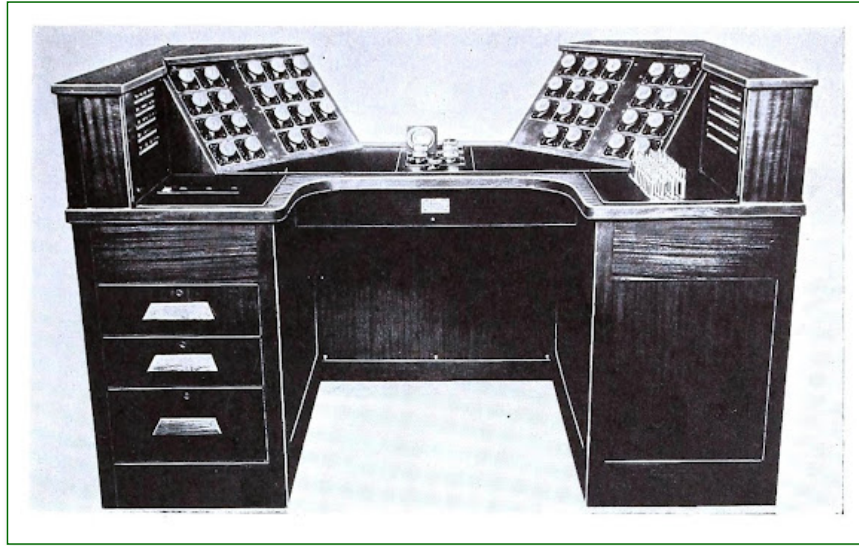
Western Electric

*Makers of your Bell telephone and leaders
in the development of sound transmission*



For easy hearing, the Western Electric Public Address System makes every seat a front seat.

Great changes were wrought in theatre audio control with the opening of **Radio City Music Hall** and its sister, the **Center Theatre**. Both were equipped by RCA, and shown below is their PB-78 Control Console, far easier to operate than the ERPI rack-bound "console" at the Fox.



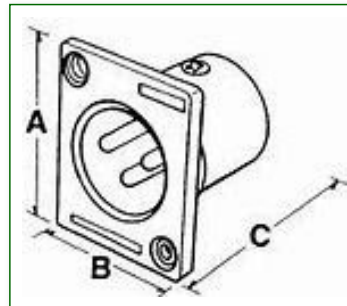
Another fundamental change from ERPI to RCA was that there was no glass between the operator and the auditorium. This 1941 shot shows the PB-78, greatly augmented.

The Radio City theatres, which both opened in December, 1932, benefited from all the user-friendly and streamlined RCA's broadcast equipment being designed for their NBC "Radio City" studios, which opened a year later. The PB- 78 has the signature pot knobs that RCA used for decades.

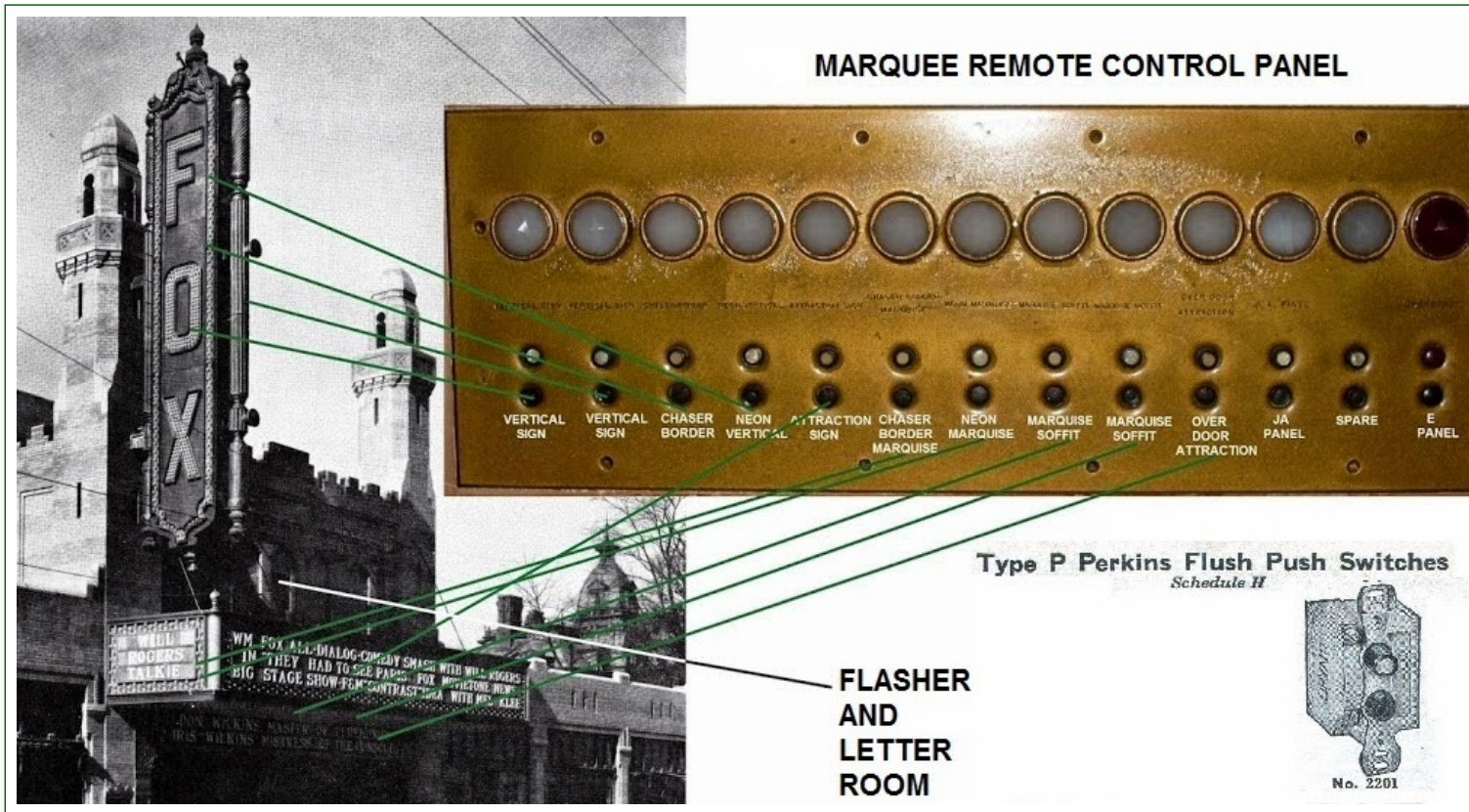
The Radio City theatres also utilized a brand new microphone, the 44 which became standard equipment in broadcast studios for forty years. Below, the production line in Camden.



Instead of the three-prong Edison type microphone plug, all Radio City audio connectors were Cannon Electric F-series, still in universal use today and known as XLR.



Unlike a typical castle, the Fox was adorned with a 33 foot high hammered copper vertical sign and a 48 foot wide "Marquise" (marquee) which contained the primary attraction boards. The sign lighting which included more than 3,000 11 watt S-14 lamps was remotely controlled from a panel located in the Assistant Manager's office. The sign was manufactured by the Texlite Electric Sign Company, a Dallas concern which had a shop in Atlanta.



Access to the Flasher and Letter room was gained from the roof through doors from the Shrine Banquet Hall or Shrine Lounge. From the flasher room, one could climb down to the marquee.



Courtesy Mister Kahn

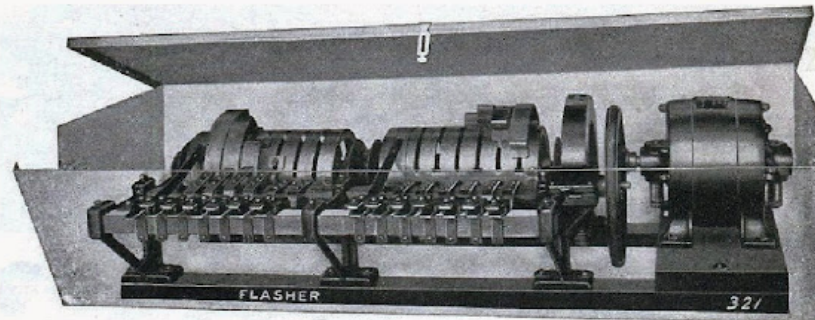
Within the flasher room were located the branch circuit panels, the contactors which corresponded to each remote push switch, and the electro-mechanical chasers and spellers which were manufactured by Reynolds Electric Company (Reco) of Chicago. The many rapidly-spinning shafts on the motorized machines made quite a racket and spewed out a steady dose of sparks.



The chaser borders on the vertical, attractions boards and the scintillating (glittering) marquee soffit lights were controlled by this type device shown below. The chaser for the attraction board had 29 fingers (contacts). There were two "rainbow effect corner" machines as

well.

Reco Chaser Type

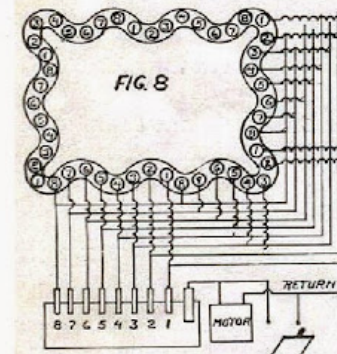


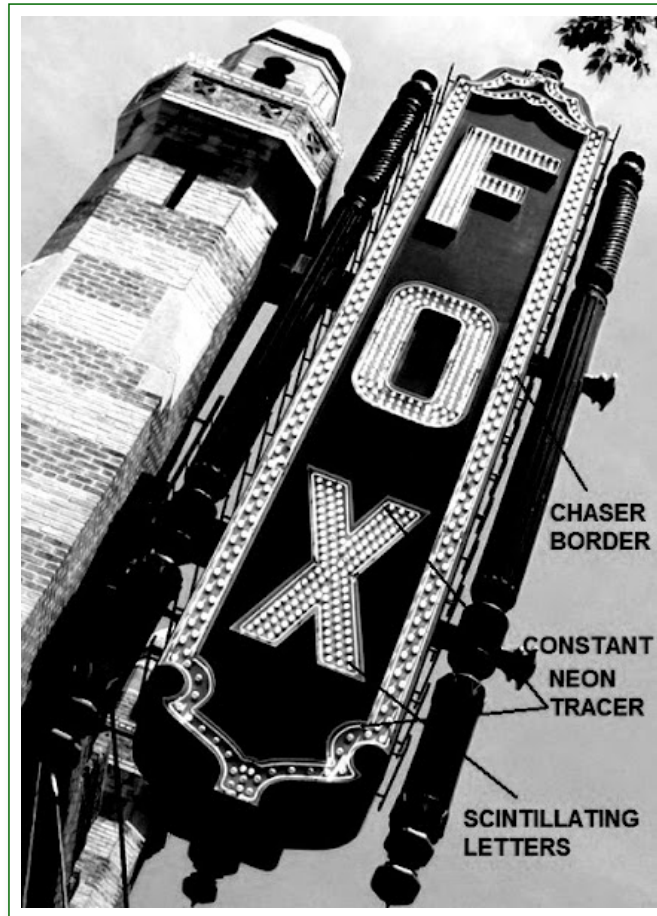
Cat. No. C-12-5

Directions for Wiring

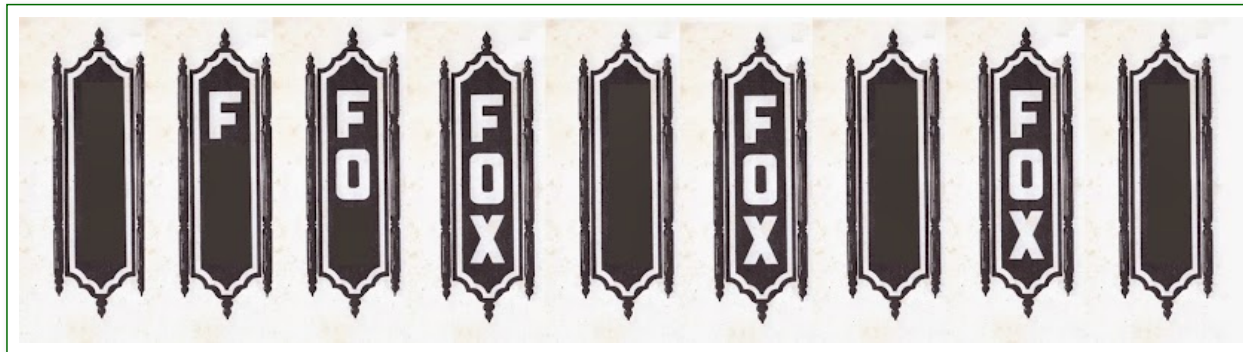
For two "Chasers," divide the total number of lamps by two, i.e., 60 lamps divided by two equals 30 circuits, and number sockets 1 to 30 and 1 to 30. This will require a 30-brush flasher.

For three "Chasers," divide by three and number from 1 to 20, 1 to 20 and 1 to 20, which requires a 20-brush flasher.



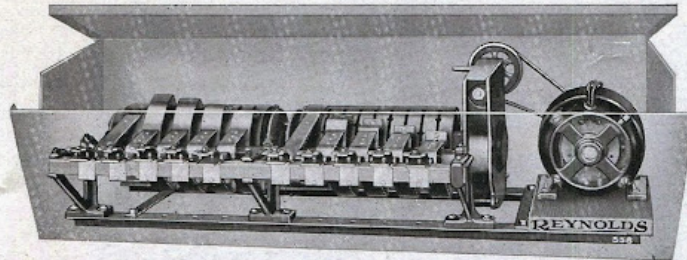


The Vertical would spell F-O-X with lamps steady; all letters flash on then off three times; then repeat the process with the letters scintillating.



REYNOLDS *Reco* **Speller Type**
ELECTRIC COMPANY

For flashing Letter after Letter, Word after Word



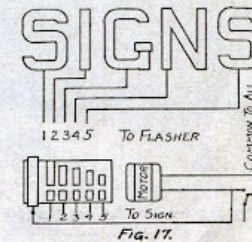
Cat. No. SP-8-15

A sign flashing in this manner not only arouses curiosity and holds the attention, but imprints an indelible impression upon the passer-by.

Standard Speller Effect

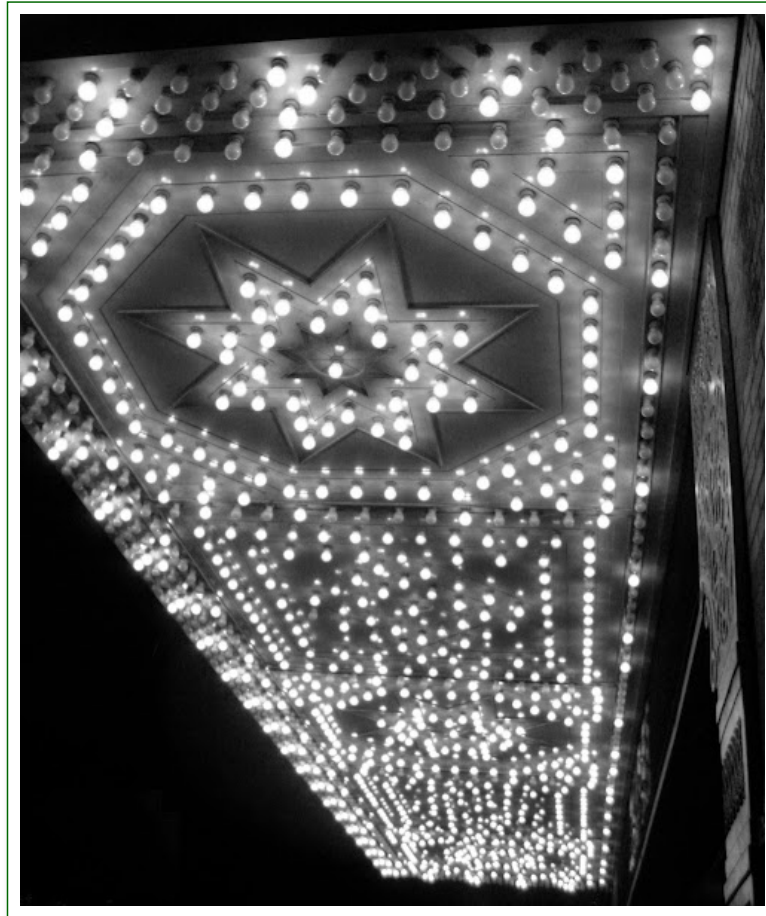
One letter after another till all are lighted, all out, all on together, all out and repeat.

Speller effects require a circuit for each letter and a flasher brush for each circuit.



To see the complete Reynolds catalog, click <http://foxfact.blogspot.com/2015/01/reynolds-electric-company-reco-of.html>

The marquee soffit comprised chaser borders and a host of other enticing motions.

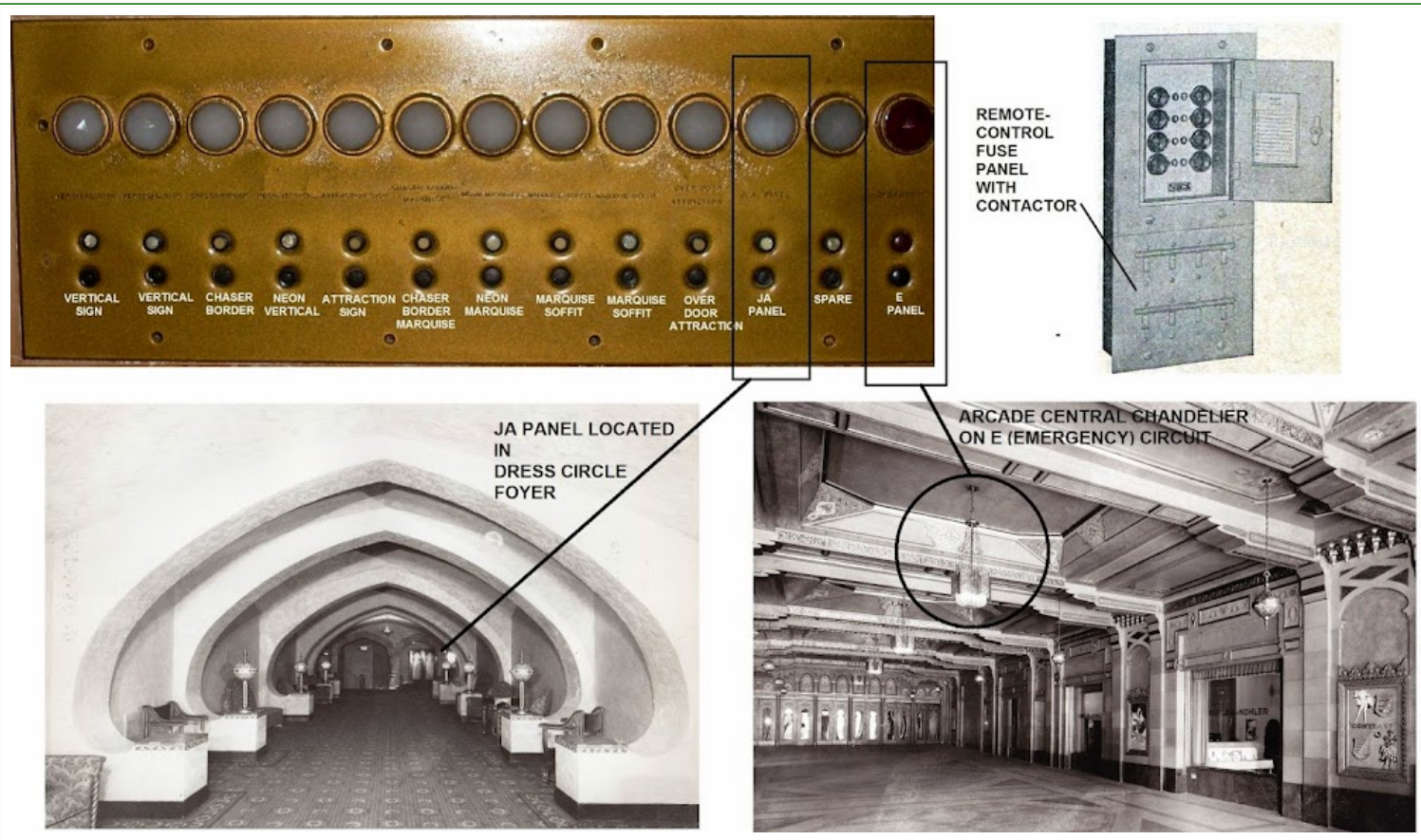


Lawson interchangeable attraction board letters featured molded milk-white glass characters set into 12" high copper frames. "Hanging a marquee" with reverse-type letters was not a simple task because the text had to fit precisely, with blanks inserted to fill the gaps.

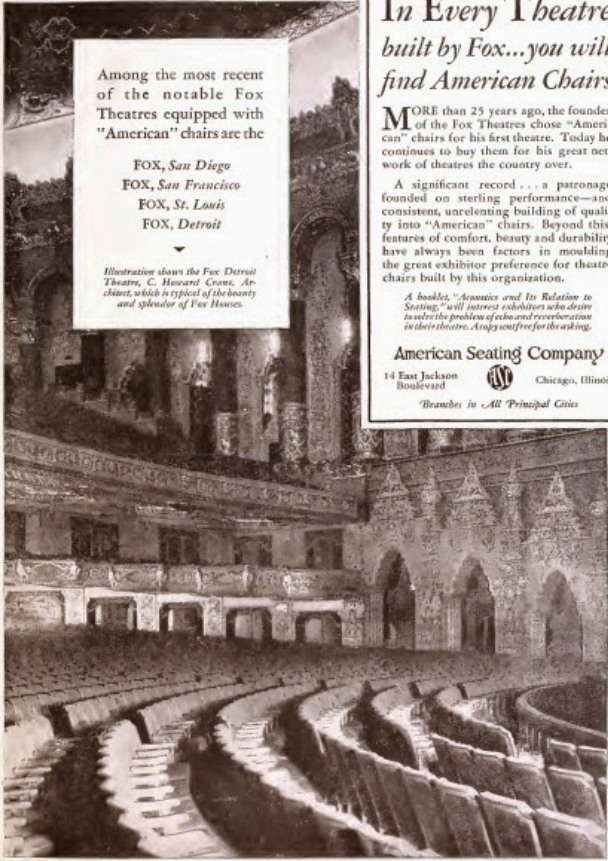


Courtesy reynoldsstill.blogspot.com

Two push switches activated remote-control panels, JA for lighting fixtures in the Mezzanine and Dress Circle Foyers and E for emergency. E panel, located in the Main Switch Power Room in the northwest corner of the basement, controlled aisle lights, exit signs, exterior lighting and select fixtures such as the center chandelier in the Arcade, shown to the right. Panel FR, non-remoted and equipped with switches for each circuit were located adjacent to the Marquise Panel and controlled the Main and Mezzanine Foyers . Panel BB was located in the basement and controlled the Lower Lounges.



Patron comfort was a primary consideration and the automatic self-closing theatre seats were furnished and installed by American.



Among the most recent
of the notable Fox
Theatres equipped with
"American" chairs are the

FOX, San Diego
FOX, San Francisco
FOX, St. Louis
FOX, Detroit

Illustration shows the Fox Detroit
Theatre, C. Howard Crane, Ar-
chitect, which is typical of the beauty
and splendor of Fox Houses.

In Every Theatre built by Fox...you will find American Chairs

MORE than 25 years ago, the founder
of the Fox Theatres chose "Ameri-
can" chairs for his first theatre. Today he
continues to buy them for his great net-
work of theatres the country over.

A significant record...a patronage
founded on sterling performance—and
consistent, unrelenting building of quality
into "American" chairs. Beyond this,
features of comfort, beauty and durability
have always been factors in moulding
the great exhibitor preference for theatre
chairs built by this organization.

*A booklet, "Acoustics and Its Relation to
Seating," will interest exhibitors who desire
to solve the problem of echo and reverberation
in their theatre. A copy sent free for the asking.*

American Seating Company

14 East Jackson
Boulevard



Chicago, Illinois

Branches in All Principal Cities

American boasted of re-seating out-dated theatres section by section without a performance missed, which the Fox unfortunately took advantage of in 1963.

Motion Picture News June 5, 1926

HEADLINERS

The Midnight Matinee



Watch your Theatre grow young again
between Midnight and Morning —

How long will the house be closed for reseating? A natural question! Not a day if you want to keep it open. Reseating and performances are continuous. They follow each other without interference. When the curtain comes down and the house empties at night, installation mechanics "ring up" on the night's program of putting in new seats. From midnight till morning the work goes on—methodically—rapidly—efficiently. A section of the old chairs comes out.

The electric drills begin to hum. A section of new seats goes in. The work is timed—perfectly—to allow for the house being put in perfect order for the next regular performance. Between midnight and morning the old theatre gradually takes on the appearance of a new playhouse. Comfort and beauty grow like a flower from within, spreading from pit to gallery with each night's work and in the end—new seating throughout—not a night lost or a single patron turned away.

The Roll Call



Riviera Theatre, Chicago

Temple Theatre, Knoxville, Tenn.

American Seating Company

NEW YORK 113 W. 40th Street	CHICAGO 10 E. Jackson Blvd.	BOSTON 77-D Canal Street	PHILADELPHIA 1211-1, Chestnut Street
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The seating and all other surfaces were kept clean via the central house Spencer Turbine vacuum system equipped with forty outlets concealed throughout the house and backstage areas. Spencer also supplied organ blowers to provide the opposite function.



The modern theatre cleaning method

A dirtless, dustless, scrupulously clean house each day, from lobby to balconies: One or two operators using the modern Spencer Central Cleaning System clean the entire theatre in a few hours.

—thoroughly cleaning all types of floors, under the seats, the

stage and even upholstery and hangings.

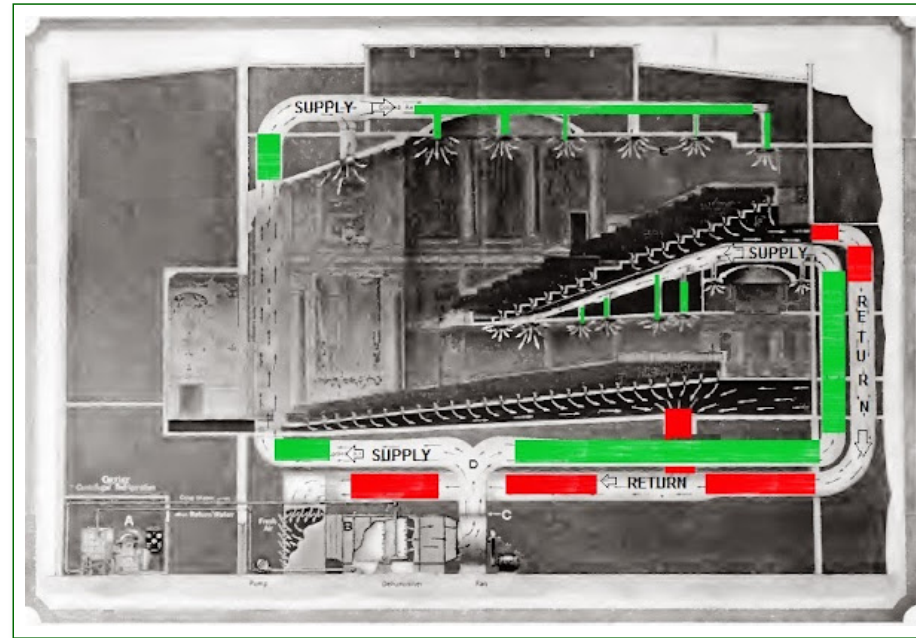
—leaving no dust to settle back on seats and furnishings.

Carpets last longer — stay NEW longer—because dust and grit do not become embedded to mat and cut the fibres.

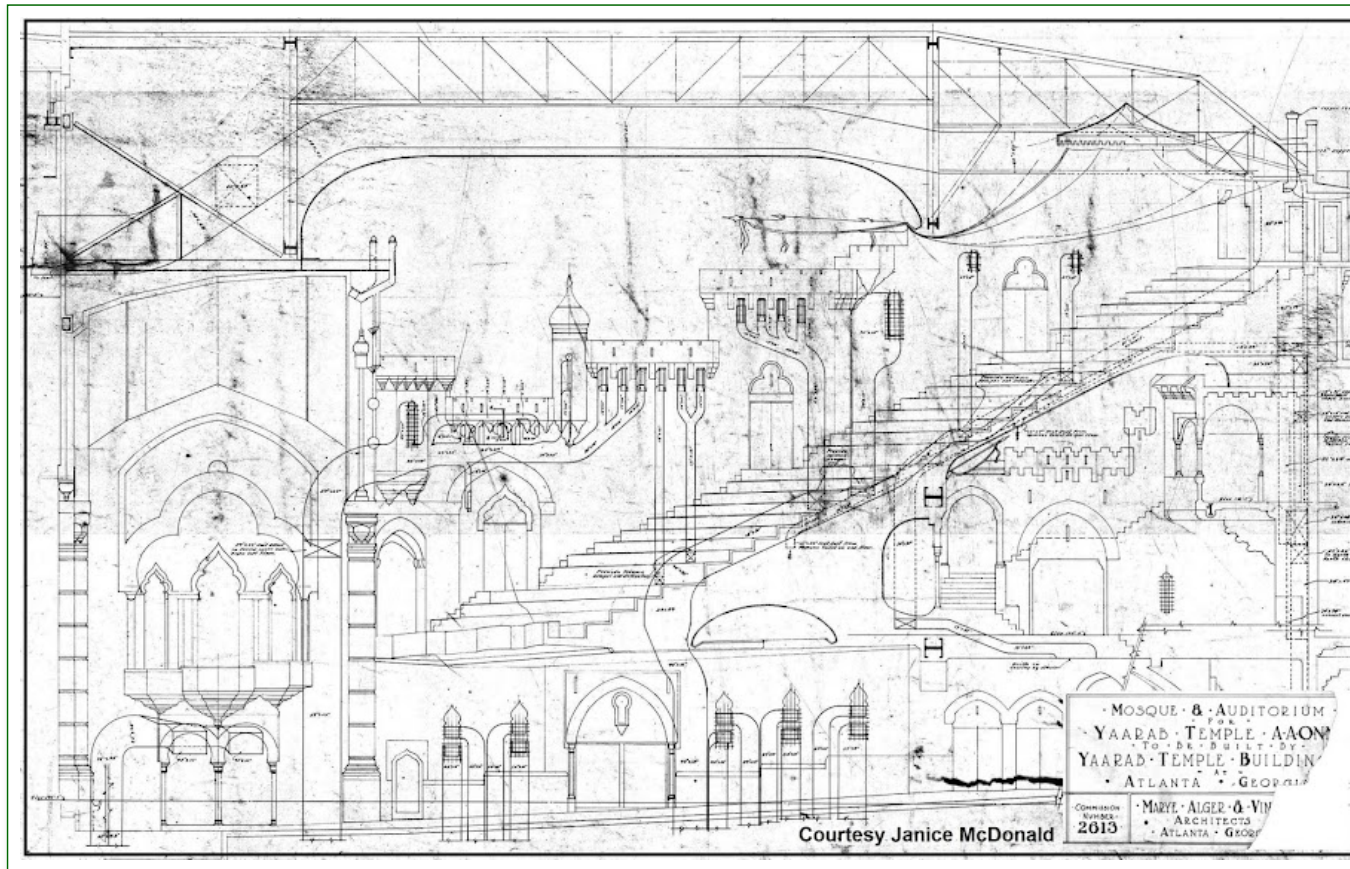
SPENCER CENTRAL CLEANING SYSTEM

THE SPENCER TURBINE COMPANY, HARTFORD, CONNECTICUT

Totally concealed was the low-velocity heating, cooling, and ventilation apparatus. Supply air was blown downwards from diffusers hidden along the edges of the Sky or from decorative filagree within the balcony soffit. Return air was drawn into the plenums beneath the seating at both levels, as shown in this diagrammatic drawing of a typical theatre.



A similar view, longitudinal section through the Fox Theatre auditorium, showing HVAC ductwork. Every faux window in the place was actually a supply register.



In the Fox, the temperature of the auditorium air was regulated by a Johnson Controls system and either heated by two coal-burning Kewanee low-pressure boilers or cooled by dual York refrigeration machines and motivated by a fan turned by this 75 horsepower motor and and flywheel located in the sub-basement.



Floyd Jillson photo

Temperature was regulated by Johnson Controls.

**JOHNSON CONTROL
IN THEATRES**

Fox Theatre Atlanta
Mayr, Alger & Vinour, Architects
Robt. S. Newcomb, Con. Engineer

Declared "the largest and finest theatre in the South. Cost \$3,000,000. Seating capacity 5,000." Johnson Control regulates the air conditioning system. Johnson Control instruments and switches handle the operation of the heater coils, by-pass dampers and fresh air dampers — providing a constant temperature of the air at all times, regardless of out-door weather and fluctuating sizes of audiences in the theatre. Johnson Control of temperature and humidity is complete; and applies to every system of heating and ventilating and to every individual requirement. Write now for the interesting book of details: illustrating and describing every phase of Johnson equipment and service.

JOHNSON SERVICE COMPANY
MILWAUKEE, WISCONSIN
Established 1885
BRANCHES IN ALL PRINCIPAL CITIES

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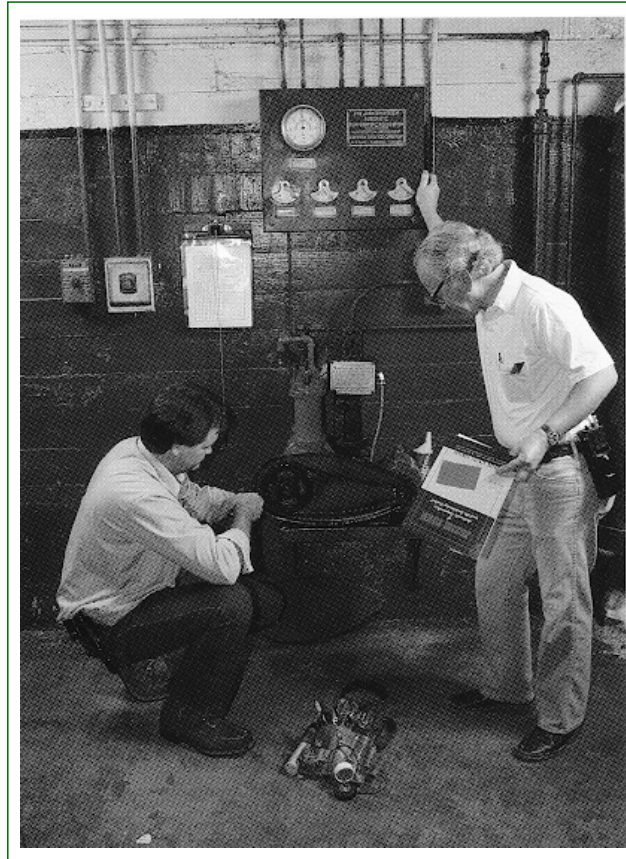
JOHNSON SERVICE COMPANY
MILWAUKEE, WISCONSIN
Established 1885
BRANCHES IN ALL PRINCIPAL CITIES



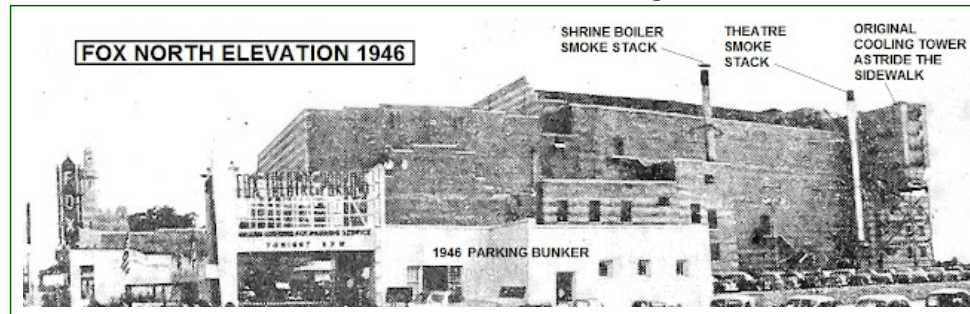
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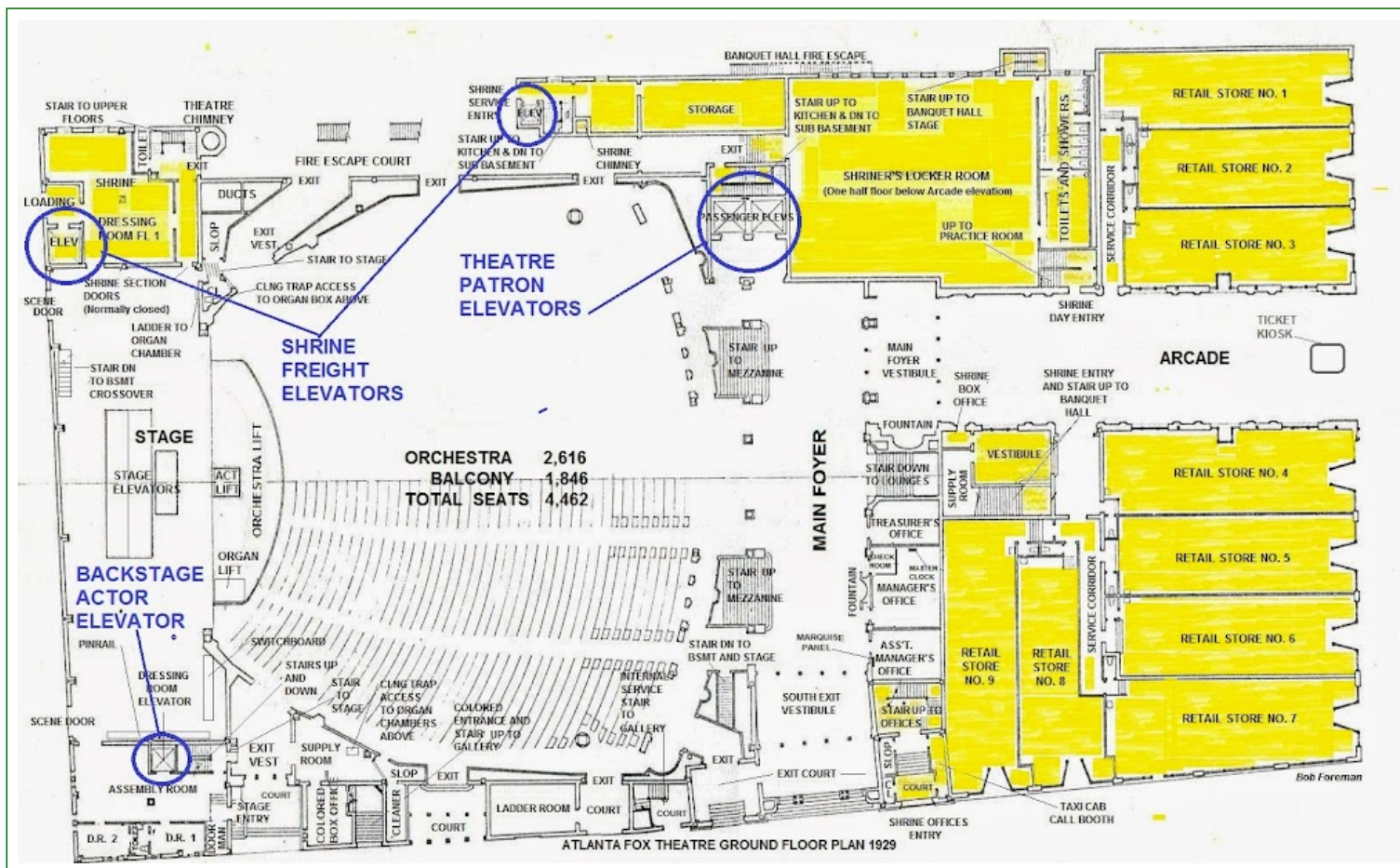
Johnson man and Joe Patten (right) at Johnson System in sub basement.



North view showing Shrine and Theatre smoke stacks and trestle tower for cooling.



Rapid vertical movement of materiel and personnel was provided by two freight and three passenger elevators to supplement thirty staircases.



The passenger elevators were manufactured and installed by Otis, and the Patron elevators employed the Microdrive self-leveling feature.

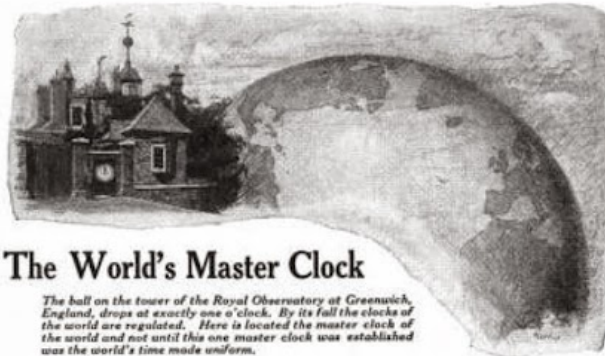


The backstage Actor elevator was said to be the first fully-automatic in town, requiring no operator.



Courtesy Mister Kahn

In order to facilitate coordinated time, a Stromberg Electric Self-winding Master Clock with pendulum was installed in the Manager's Office.



The World's Master Clock

The ball on the tower of the Royal Observatory at Greenwich, England, drops at exactly one o'clock. By its fall the clocks of the world are regulated. Here is located the master clock of the world and not until this one master clock was established was the world's time made uniform.

WHAT Greenwich does for the world the Stromberg Master Clock will do for the clocks and time recording machines in your establishment. By its use is eliminated the hand winding of numerous clocks, the costs of regulation and repairs, and the losses incurred through their unavoidable variations.

The constantly increasing number of time recording machines, which have become so vital a part of every large plant, has created new problems. Weekly windings of many clocks, the high cost of repairs to machines containing delicate clock movements, and the impossibility of regulating a number of clock movements to keep the same exact time, demanded an electrically operated system of Time Recorders, automatically controlled by a single, or Master Clock.

The Stromberg Electric Company is the originator of electrically operated Time Recording Systems. For many years we have devoted our entire efforts to the development and manufacture of such systems, and

Write today for full particulars

STROMBERG ELECTRIC COMPANY
Originators of Electrically Operated Time Systems
Harvester Bldg. Dept. A Chicago, Illinois

Please mention **SYSTEM** when writing to advertisers

among our customers are many of the largest manufacturing plants in the United States.

Stromberg Time Recorders contain no clock movements or other delicate parts; they withstand the hardest usage and require practically no repairs. No periodic winding or other attention is necessary. Automatically they perform their functions from one year to another. And they can be used under conditions of dirt, dust and vibration where the operation of machines containing clock mechanisms would be impossible.

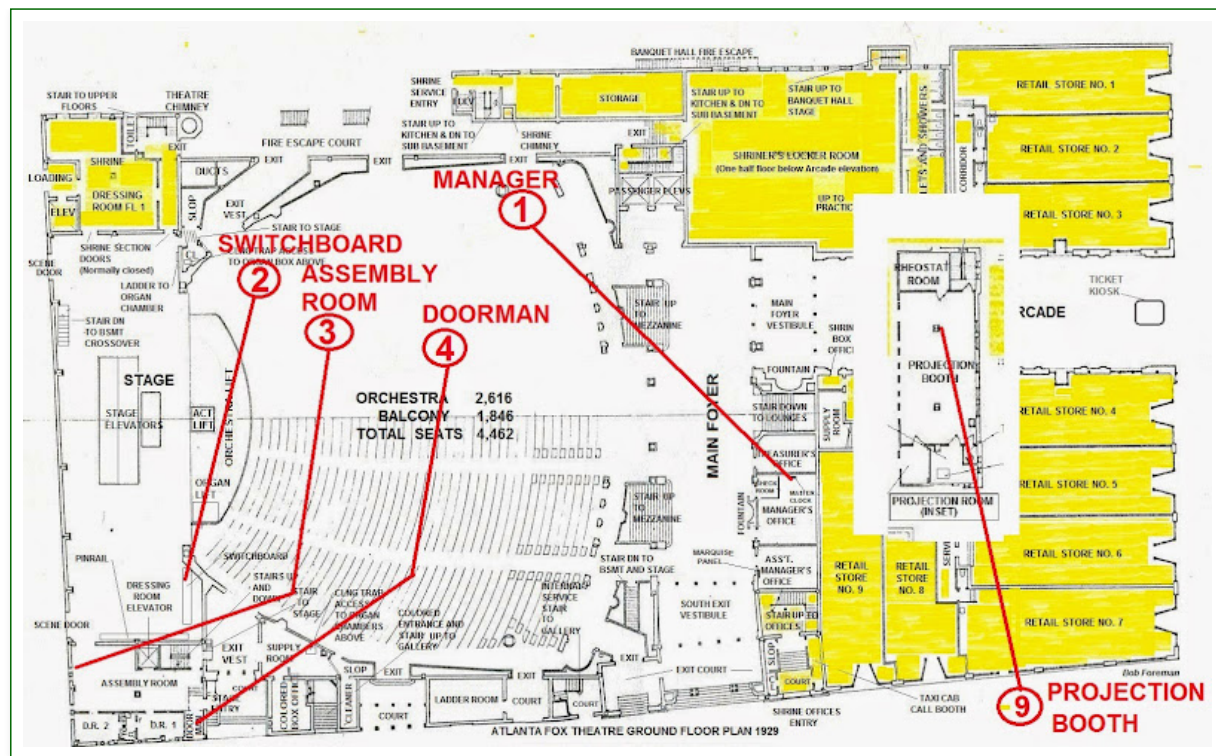
One self-winding clock, the Master Clock, furnishes the time to any number of Recorders. From this source uniform or synchronized time is furnished to the entire plant.

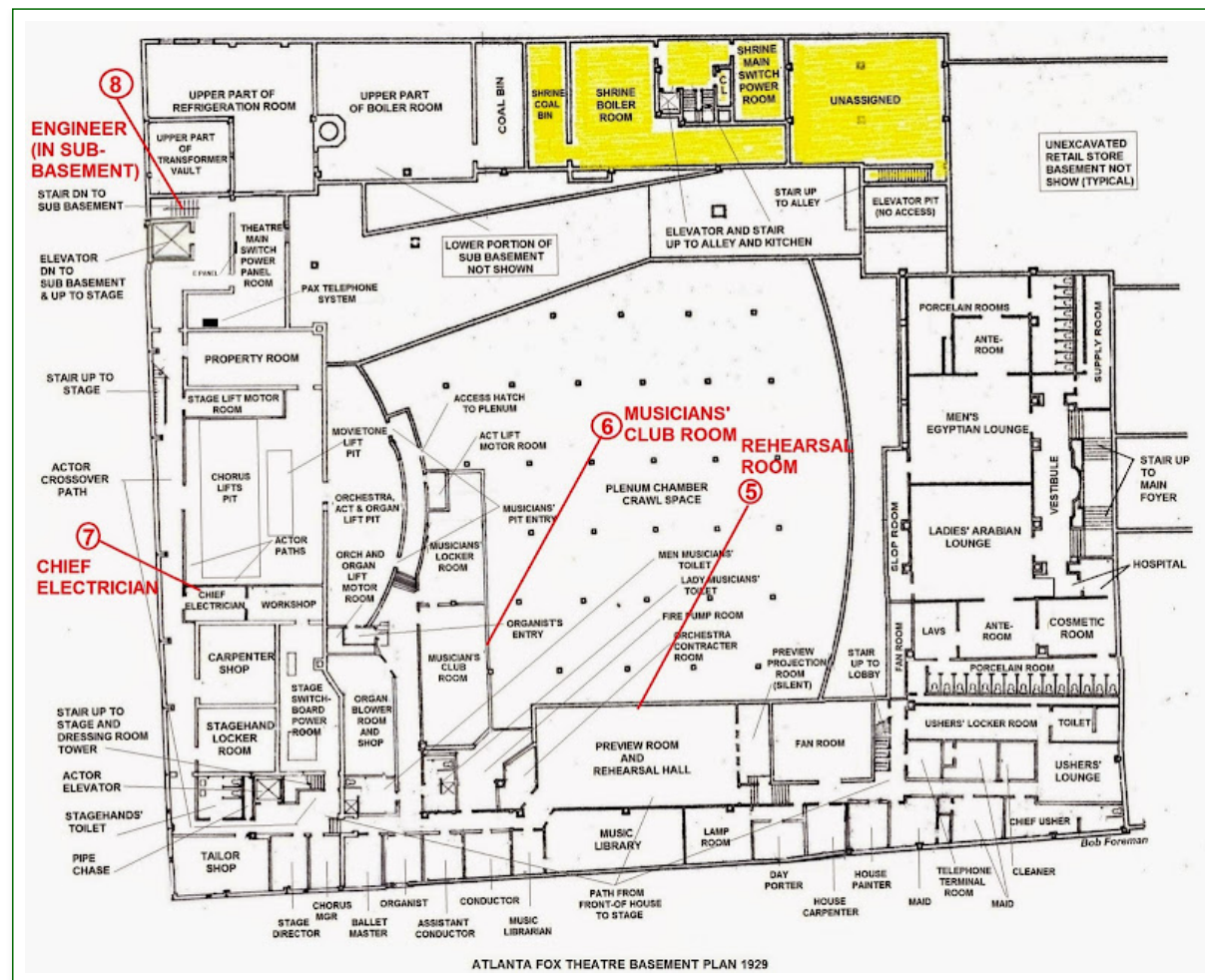
The Stromberg System is flexible and may include machines which deal with every phase of time, such as Time Recorders for cost keeping, Secondary Clocks for observing time, Employees' In and Out Time Recorders, Office Time Stamps, Instruments for automatically operating work signals, etc., etc.



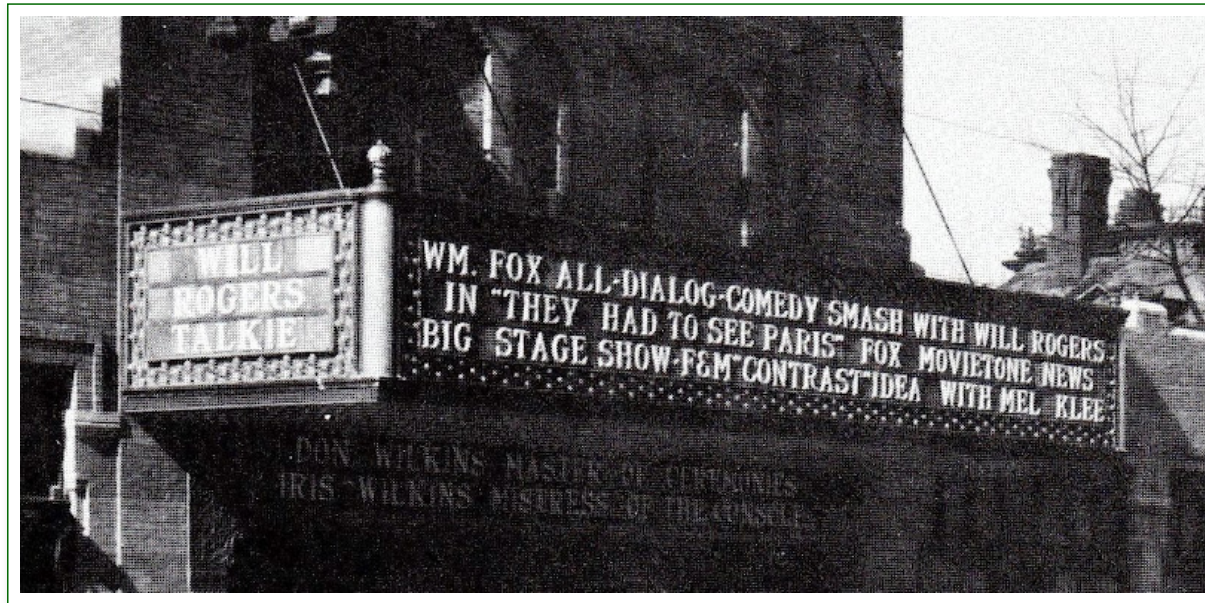
Courtesy bidsquare.com

Through a pulsed 110 volt signal, the Master Clock drove Secondary Clocks "for observing time" located in nine key locations as shown on the maps below.





Strict central time was necessary in a Super Deluxe Movie Palace such as the Atlanta Fox which was a Presentation House with a four-a-day policy. As the second week marquee and print ad below describe, the Fox presented a feature-length talking picture, selected short subjects, and a fifty-minute stage show, with music provided by the house orchestra in conjunction with the Moller organ.



In 1929, the picture and stage show changed weekly. The Fanchon and Marco stage shows traveled with principal talent, scenery, costumes and orchestra parts.

TELEPHONES
Jackson
3141—3142—3143

DEDICATED

Last Wednesday to your everlasting enjoyment, the magnificent New Fox Theater now enters its second eventful week...

BEGINNING MONDAY

You will see an even greater program than that which ushered in this new era of entertainment. Plan NOW to attend!



WILL ROGERS

ALL TALKING
Comedy
Drama

They had to SEE PARIS

Don & Iris

IRIS

Hear her in New Musical
Surprises this week.

DON

That Genious Master
of Ceremonies
who multiplies
your enjoyment
of each act on
the stage.

Enrico Leide

Directing
THE FOX GRAND
ORCHESTRA

In a Fantasy
From the Operetta,
"THE DESERT SONG"
with choral
arrangement.



Directed by Frank MOZAGEL

YOU'LL LAUGH THE
OLD YEAR OUT

When You See and Hear

WILL ROGERS

He's a Wow! ... A Riot! ... A whole
carnival of fun! ... He'll tickle your
funny bone and keep you grinning for a
year!

FANCHON & MARCO

Present

"CONTRASTS" IDEA

Featuring

GYPSY BYRNE, BUD AND
ELEANOR COLL, BLONDES
AND BRUNETTES, AND
LOCAL DANCE CHORUS.
45 PEOPLE.

FOX MOVIE TONE
NEWS.

"It Speaks for Itself"

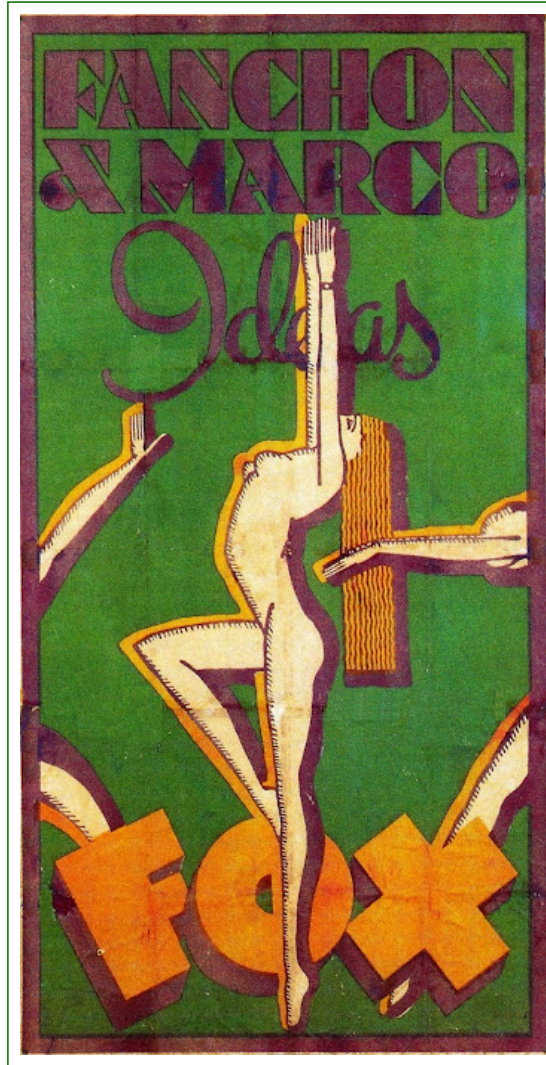


MATINEES	
Children	15c
ADULTS, ADMISSION ..	35c
Loges	50c
EVENINGS	
Children	20c
ADULTS, ADMISSION ..	60c
Loges	75c

5,000 SEATS.
NONE RESERVED.

THE
FOX
"ACRES OF PARKING SPACE"

All other show personnel were supplied by the Atlanta Fox including a Master of Ceremonies, conductors, organists, directors, choreographers and designers; stagehands, wardrobe and projectionists; a thirty-five piece house orchestra; and sixteen resident chorus girls known as the Sunkist Beauties, stylized here in the opening week three-sheet, printed by Conger of Atlanta.



In 1929, the Atlanta Fox Theatre employees totaled almost two hundred, including front-of-house and the usher corps. To ensure instant communication among them, the Fox was equipped with a sophisticated House Phone System. The North Electric Private Automatic Exchange (PAX) connected fifty dial telephones without the need for an operator. This was a remarkable device considering that only two of Atlanta's Bell Telephone exchanges were automatic (with dials) in 1929, and telephonic automation, as this advertisement of the era shows, was regarded as a boon.

The Cussless, Waitless, Out-of-Orderless, Girlless Telephone

secret  *service*

*"Reports the
line"*  *"Nothing
Doing"*

The Operator

THE LATEST PATTERN AUTOMATIC TELEPHONE will be used throughout Montana. It is the most perfect device for the purpose that science has produced. All comparison, by the most exacting tests, emphasises its advantages over the old manual system. Operating expenses are decreased 50 per cent. It is always ready for service; never strikes; always accurate and absolutely secret. It is in use in seventy cities throughout the United States. Above all, **THE AUTOMATIC** satisfies the public, which is the real foundation for successful telephone business. Its desirability is proven and the cost of maintenance, small. Wherever the Automatic Telephone is used exclusively, it has received the hearty and unqualified approval of the public.

THE WISEST MAN IS THE ONE WHO SEES FURTHEST AHEAD, who buys now what people are going to want later. The few buy things when they are cheap, the many wait until they are dear. Telephone securities are no exception to the rule. This is what the past teaches us. It is as certain as that water runs down hill.

We will be pleased to tell you
more about the telephone
business

Northern Electric PAX trade ad for the 1925 Sweet's catalog:

THE NORTH ELECTRIC MANUFACTURING COMPANY

Automatic Telephone Equipment

GENERAL OFFICE AND FACTORY

GALION, OHIO

REPRESENTATIVES IN ALL PRINCIPAL CITIES

ASSOCIATED COMPANIES

COVENTRY AUTOMATIC TELEPHONES, LTD., LONDON, ENGLAND

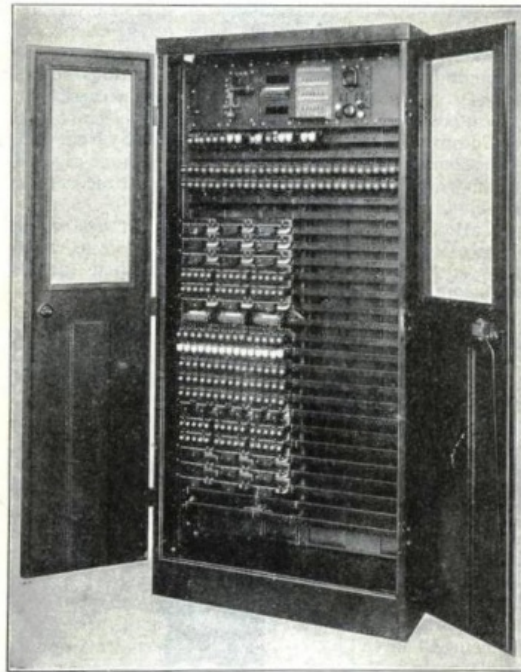
PEEL-CONNER TELEPHONE WORKS, STOKE, COVENTRY, ENGLAND

Product

NORTH PRIVATE AUTOMATIC TELEPHONE EXCHANGES.

Experience and Development

THE NORTH ELECTRIC MANUFACTURING COMPANY was originally established as a partnership in 1884 and during all of the intervening period has been engaged in the manufacture of telephone equipment. In addition to its complete line of private automatic telephone exchanges it also manufactures two varieties of machine switching equipments for city exchanges. The product of the Company is in service all over the United States and also in Canada, Mexico and in many foreign countries.



North All-Relay Automatic Exchange

Capacity, 50 lines and 6 links. Equipped, 30 lines and 3 links

Exchange Equipment

As the exchange equipment proper is extremely quiet in operation and suitable for installation in an office or other similar location, the cabinet used is a piece of standard steel office furniture finished in olive green, and equipped with glass doors as indicated by

Power Equipment

The storage battery, motor generator set, meters and various power control apparatus are also housed in a steel cabinet finished in green. Due to the nature of this equipment this cabinet is of a type suitable for installation in such places as engine room or basement. Illustration of this cabinet appears at the right.



North Power Cabinet

Telephone Instruments

The telephones used are the same as utilized in connection with city automatic telephone systems and are similar to those used in manual city systems of the common battery type, with the exception of the dial.

An illustration of the desk type instrument is shown at the right.

The North Dial

All telephones are equipped with the North dial which drives and controls the entire mechanism. The finger wheel is of solid rustproof Monel metal and all delicate moving parts are housed in a dustproof case.



Automatic Desk Phone

All-Relay Apparatus

The exchange apparatus is furnished in two separate and distinct types.

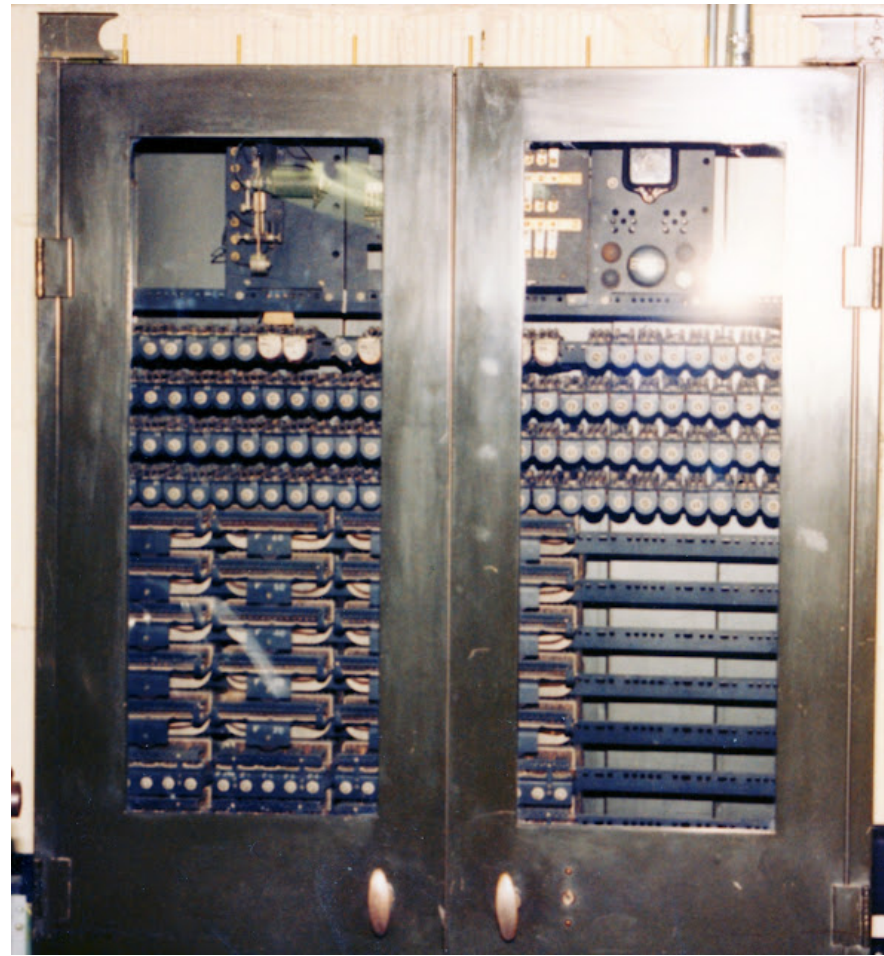
All-Relay equipment, as the name implies, is built of relays exclusively; using no rotary switches, step-by-step switches or any other form of electro-mechanical apparatus involving rotary friction, sliding or scraping friction or any other form of wear and tear with the accompanying oiling, cleaning, repairing and other maintenance. This type of construction gives the user the advantages of: (1) much greater durability or longer life, (2) freedom from interruption or more reliable service, and (3) cash saving through economy in maintenance.

The "North All-Relay Automatic Exchange" with its standardized power plant and the "North Dial" constitute the most finished and modern develop-

The brain of the machine

photograph. The apparatus shown is equipped for one-half the capacity of the cabinet so as to illustrate the arrangements for readily taking care of future growth.

ment of the automatic exchange art. The North Company is the sole American manufacturer of All-Relay exchanges.



Courtesy Hal Doby

The system in the Fox used Western Electric instruments, primarily the 202 desk set, (left) but also the 201 hanging handset (center), and both instruments required an external ringer (right) usually mounted to the baseboard.

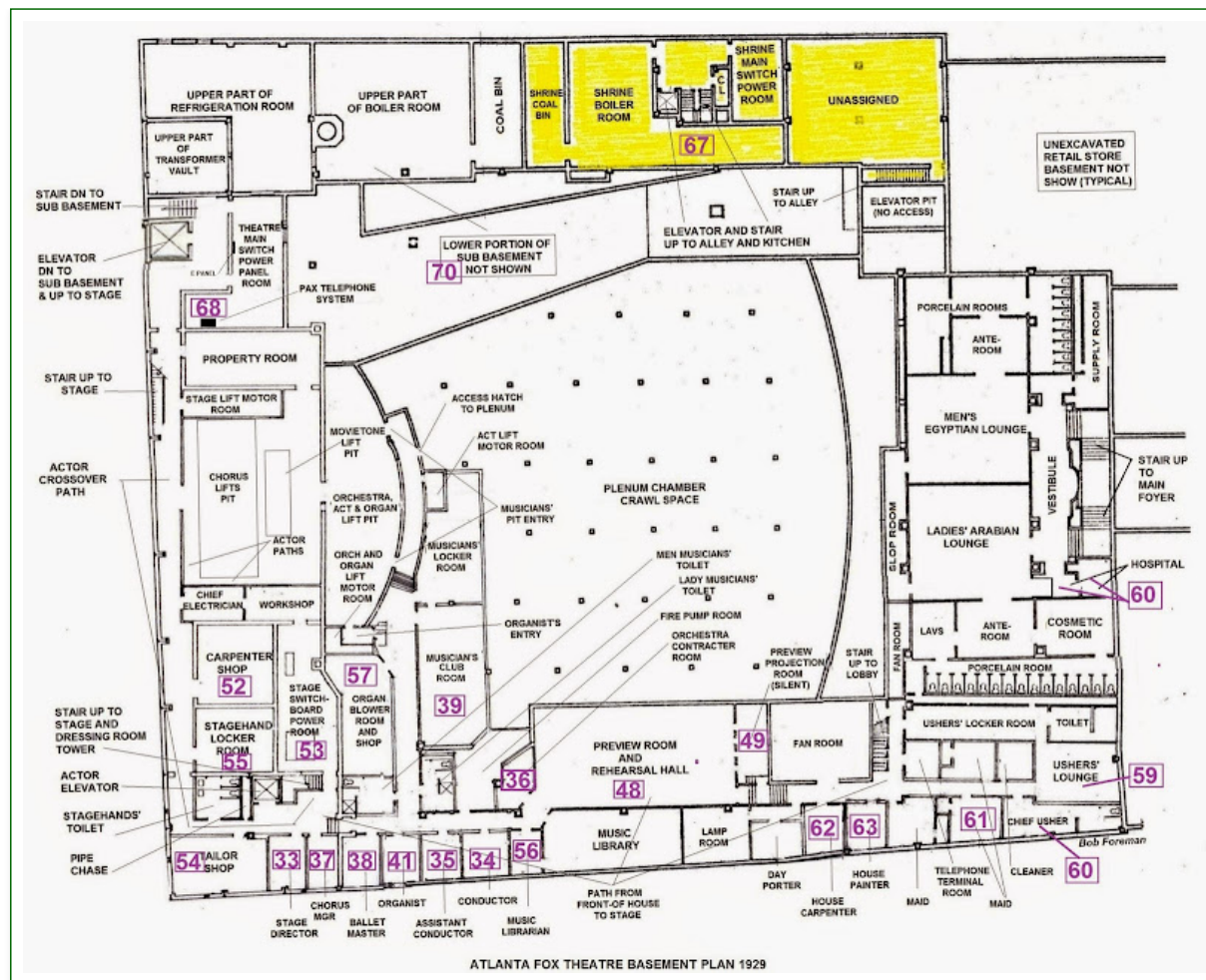


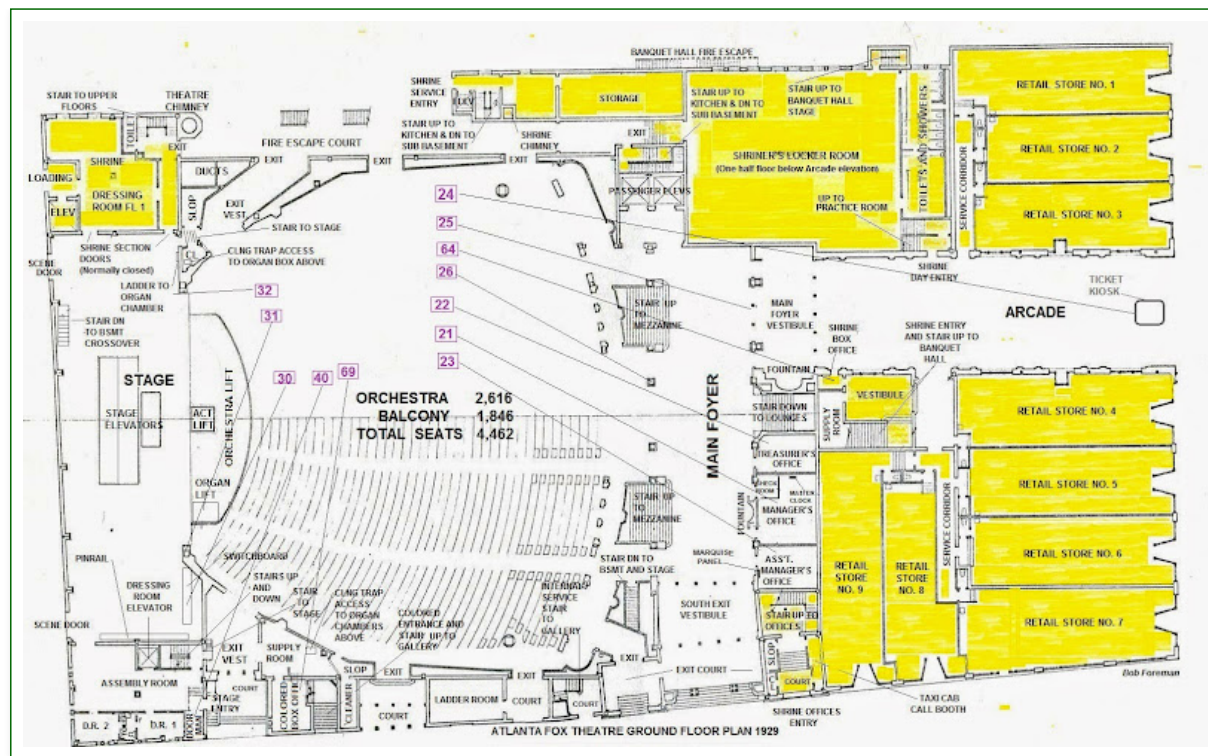
Dialing a two-digit phone number brought one either a ringing tone or a busy. Four simultaneous talking circuits were sufficient for a bevy of brief conversations. A well-organized directory reveals that the system served both the Theatre and Shrine.

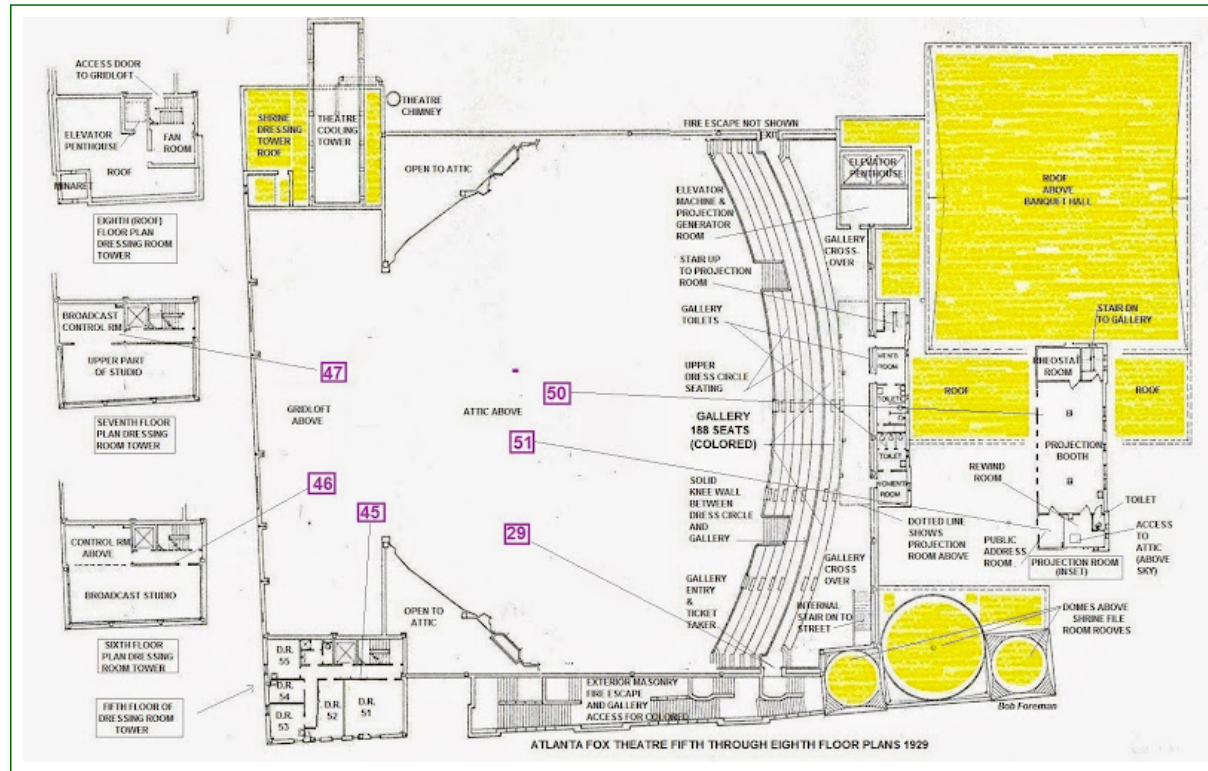
PRIVATE AUTOMATIC EXCHANGE DIRECTORY

21 **MANAGER**
22 **TREASURER**
23 ASSISTANT MANAGER
24 **KIOSK**
25 TICKET TAKER
26 MAIN FOYER CAPTAIN
27 MEZZANINE FOYER CAPTAIN
28 DRESS CIRCLE FOYER CAPTAIN
29 GALLERY TICKET TAKER
30 **STAGE- SWITCHBOARD**
31 STAGE- PROMPT SIDE (STAGE MGR.)
32 STAGE-- OPPOSITE PROMPT
33 STAGE DIRECTOR'S OFFICE
34 STAGE- CONDUCTOR'S OFFICE
35 STAGE- ASS'T CONDUCTOR'S OFFICE
36 STAGE- MUSIC CONTRACTOR OFFICE
37 STAGE- CHORUS MANAGER OFFICE
38 STAGE- BALLET MASTER'S OFFICE
39 STAGE- MUSICIANS' CLUB ROOM
40 **STAGE DOOR**
41 STAGE-- ORGANIST'S OFFICE
42 DRESSING ROOM FLOOR 2
43 DRESSING ROOM FLOOR 3
44 DRESSING ROOM FLOOR 4
45 DRESSING ROOM FLOOR 5
46 BROADCAST STUDIO
47 BROADCAST CONTROL BOOTH
48 STAGE- REHEARSAL HALL
49 STAGE- REHEARSAL HALL BOOTH
50 **PROJECTIONIST**
51 **P.A. ROOM**
52 STAGE- HEAD CARPENTER
53 STAGE- CHIEF ELEC. & POWER ROOM
54 STAGE- TAILOR SHOP
55 STAGEHANDS' LOCKER ROOM
56 STAGE- MUSIC LIBRARIAN
57 ORGAN BLOWER ROOM
58 CHIEF USHER'S OFFICE
59 USHERS' LOUNGE
60 **HOSPITAL**
61 MATRON
62 HOUSE CARPENTER
63 HOUSE PAINTER
64 SHRINE TICKET OFFICE
65 SHRINE OFFICES
66 SHRINE KITCHEN
67 SHRINE BOILER ROOM
68 FAX (ELEC SERVICE ROOM)
69 COLORED BOX OFFICE
70 **ENGINEER**

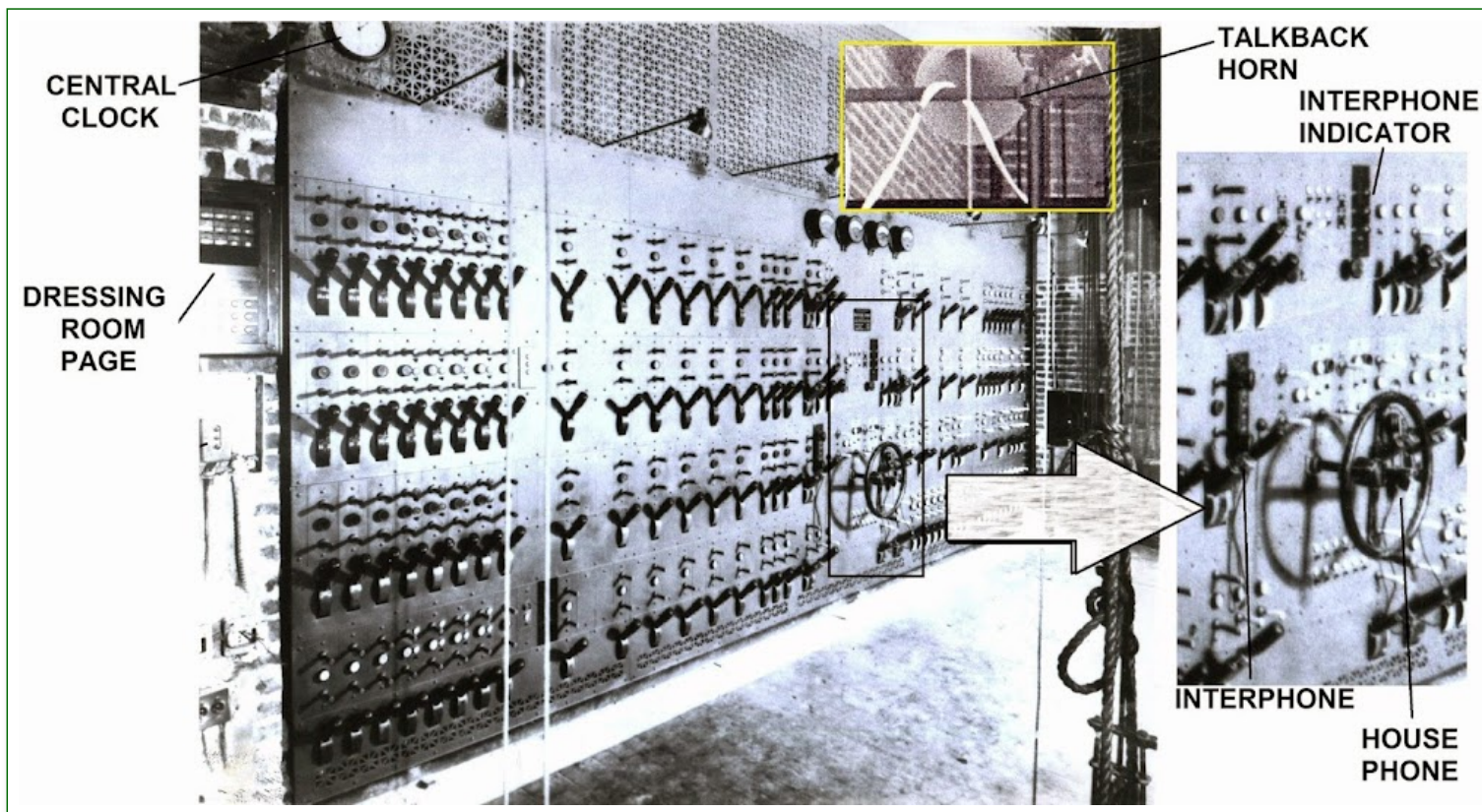
House phone locations are shown on the drawings below.



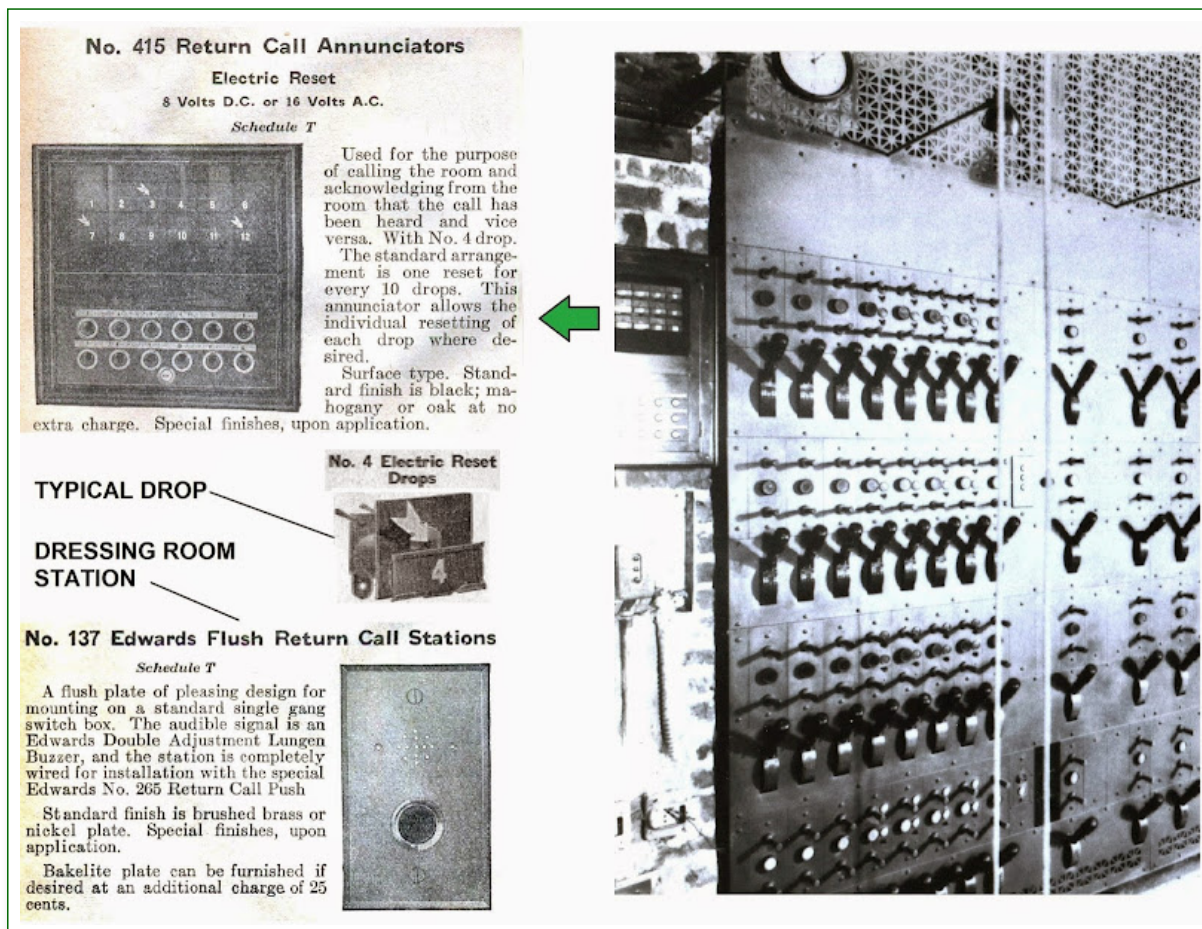




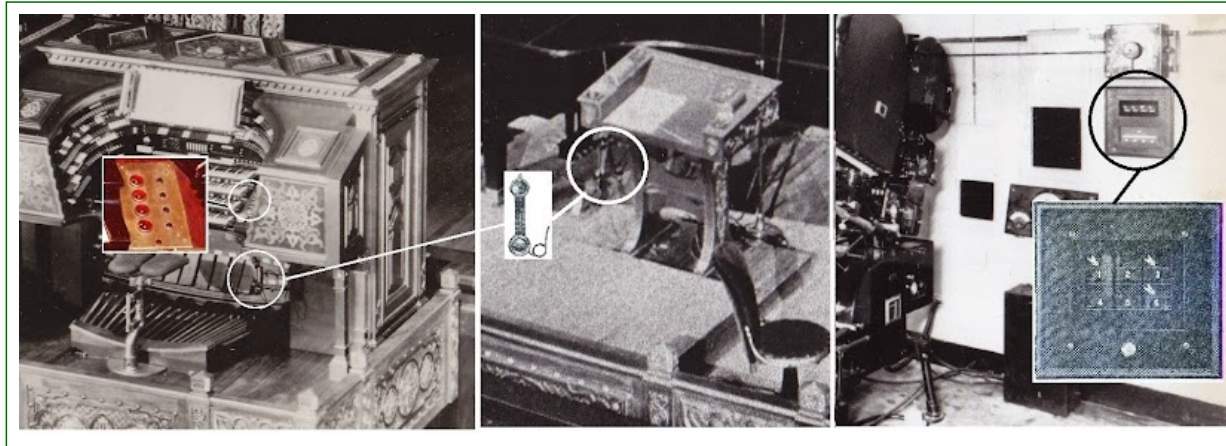
The Atlanta Fox Hub Switchboard in its role as nerve center of the theatre was served by the central clock, the House Phone and several other critical communication devices.



On the left above the desk of the Stage Director (stage manager) was the dressing room page system. The Stage Manager depressed a push button for a given dressing room on the Edwards annunciator, and a buzzer would sound there. The actor would then press the button on his "return call station," and an arrow "drop" would appear on the Manager's board to signify confirmation. In the tower alone there were sixteen dressing rooms on five floors with mirror positions for 130.



The Switchboard was equipped with a secondary telephone for production purposes known as the Interphone which connected the Switchboard, Stage Manager, Orchestra Leader, Organist and Projection Booth. Left to right, organ console indicator panel and handset; Leader stand handset; and projection room annunciator. An annunciator was used in the projection room because of the machine noise.



A view of a typical Fox Theatre Interphone instrument.



###

Part I: Hub Switchboard Operating Manual [click here](#).

Part III: Talking Picture Projection [click here](#).

For further reading about ERPI and theatrical public address systems, [click here](#).

For further reading about the Mastbaum Theatre central cluster, [click here](#).

For a master index of all of Bob Foreman's photo-essays, [click here](#).

March, 2014

Updated November, 2018